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CLINICAL NOTES OF A CASE OF ACUTE PULMONARY PHTHISIS IN WHICH IMMUNITY COULD BE PRODUCED

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Tuberculosis in common with leprosy is an example of bacillary disease, in which one attack by the causative germ, produces only partial immunity, so that reinoculation or relapse, from old unhealed lesion, or from infection from outside, has a tendency to occur in contrast to other bacillary diseases like typhoid, cholera or pneumonia in which one attack by the invading germ suffices to produce an amount of immunity which protects the sufferer from all future infections by the same germ. So ROBERT KOCH, after his discovery of tubercle bacillus set about finding a means of producing complete immunity, with the help of endotoxin and other products of the bacillus, in laboratory animals, such as guinea-pigs. Though he succeeded in proving that immunity can be artificially produced in this way, which has since been applied to human beings, yet it has been proved that this immunity is never complete. NEUFOLD and VON BEHRING stated later on, as a result of their experiments on the lines of KOCH, that cattle and human beings are better subjects for production of this complete immunity than guinea-pigs. ROMER promulgated the idea and put into practice a method of producing immunity in healthy cattle, by injection of living human tubercle bacillus, to protect them from infection by bovine tubercle bacillus, this vaccine being styled *bovo vaccine*. CALMETTE'S method of injection of uninfected children, with living avirulent human tubercle bacilli under the name B.C.G. (Bacillus-Calmette-Guérin) is on this line. The treatment of human beings actually suffering from the disease who are treated during period of quiescence, by combined method of rest, graduated exercise and tuberculin, is also on this line; but those who practise this method, though they get good results out of it, are doubtful in their mind, whether complete immunisation, which will protect the patient from any future relapse, is possible; so recital of a case where this has happened, in which undeniable records are available to prove it, will not be uninteresting. For this reason, it is being reported.

CASE S. No. 83.—Lalit Mitter, sometime in 1911, when I was employed in Bacteriological Laboratory of the Calcutta Medical College, a medical student brought a stained smear of sputum of his cousin and requested me to examine it under microscope. On doing so, I found it contained so many tubercle bacilli as to look like a smear from a pure culture of tubercle bacillus. He stated that his cousin (the patient), a healthy man aged 26, had suddenly started getting high fever going up to 106° in the morning, which went down in the evening to 95° with symptoms of collapse. Along with this, there was violent cough. This smear was from his sputum. He told me besides, that he found a lesion in the right apex. Two years after, this patient came to consult me for his disease. At that time he was free from fever for over three months, but had cough. He gave a history that being a poor man, he did not consult any medical man for his disease which he knew would kill him, so he used

to lie down whole day in an easy chair underneath a tree in Bhagalpur and later in Sahibgunge where his father was employed. I found a definite lesion in the right apex. I treated him with tuberculin as an ambulant case. He started rapidly increasing in weight, during the first week the increase in weight was as much as 8 lbs.; total increase being 27 lbs. during the 6 months' course of treatment. Later he showed me an abscess which had formed in 5th intercostal space (front), right side. It had the character of a cold abscess and was bluish in colour. The pus which came out after opening it did not show under miscroscope any organism. It healed up leaving a permanent cicatrix which can be seen even now.

He came to consult me again in September, 1935, 2½ years after) for some heart trouble and not for his old trouble—during this long interval, he had not had any trouble which can be connected remotely with his old lung disease. I examined his lung out of curiosity but failed to find any lesion. I then took him to the X-ray clinic and found distinct fibrosed remnant of his 24 years old tubercular lesion. See figure.

Remarks

As according to modern idea, adult tuberculosis is tuberculosis in an immunised subject who had infection in childhood, so the sudden attack of the disease of this patient ushured in with most acute symptoms, the fever going up to 106°, was due to allergic reaction of the body to fight out the new infection and not so much an indication of virulency of the invading germ. Due to rest, this reaction succeeded in producing a good amount of immunity, which was helped by a course of tuberculin. The appearance of cold abscess, with no fever and its subsequent healing is also indicative of production of high degree of immunity, which accounts also for the patient remaining up to now, (24 years after) free from any tendency to reinoculation. It can safely be surmised that this is really a healed case of tuberculosis, which began as a galloping one. The X-ray film shows that heart is very much hypertrophied, the cause of which is not apparent. The apex of right lung down to 5th space, shows definite strands of proliferative bands. Left side also shows similar appearance. The dome of the right portion of the diaphragm is drawn up, due to fibrosis of the right lung.

Conclusion

A case of most galloping pulmonary phthisis in a young man has been brought to recovery by Home Sanatorium Method and that cicatrical patch in the seat of the old lesion can be made out even after 24 years. This cicatricial patch, if made out by a radiologist without knowing the clinical history of the case, will make him diagnose it as an active disease and as he is the infallible guide for those who practise mechanical treatment of pulmonary phthisis, one can realise the amount of danger which tuberculosis patients are running in these days of progressive science due to wrong interpretation of science.

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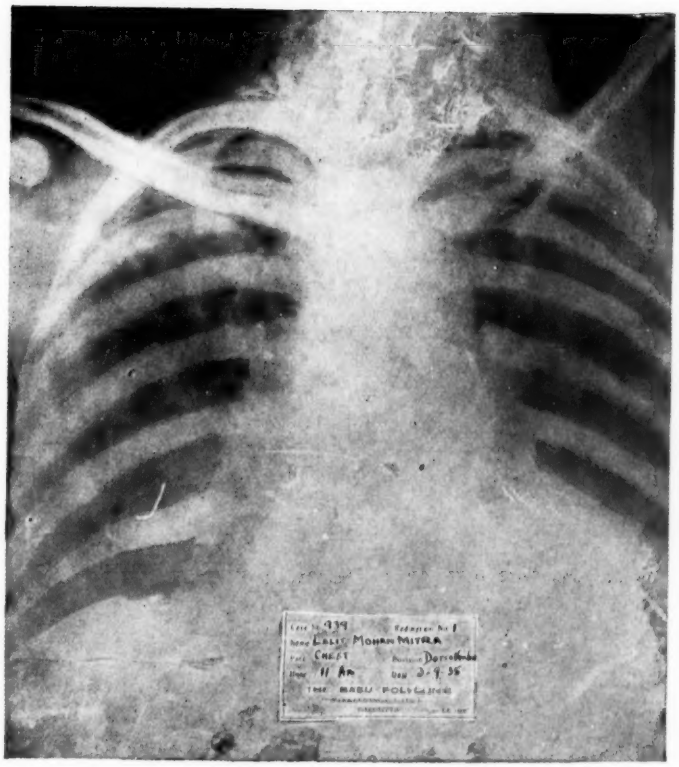
Note—This case was reported as case No. 16 (Mitter) in December, 1916, issue of *Calcutta Medical Journal.*



X-RAY PHOTOGRAPH OF PATIENT LALIT MITTER SHOWING DISTINCT FIBROSED REMNANT OF OLD TUBERCULOUS LESION.

STUDIES ON STREPTOCOCCUS AND STAPHYLOCOCCUS BACTERIOPHAGES

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Bacteriophages have now been recognised as a very useful therapeutic agent. Their beneficial effects have more or less been confined to bacillary dysentery and cholera. The effect of administration in many cases of bacillary dysentery have been wonderful. Marked improvement could be noticed shortly after the administration of the first dose and its continuation led to recovery with such rapidity, that it left no room to doubt its efficacy. Considering the fact that the Bacteriophages were first given trial to in indefinitely bad cases, mostly as a last resort when other treatments had failed, D'Herelle claimed that Bacteriophage is a very valuable therapeutic weapon in the armamentarium of the physician. Although many authorities including Dible have doubted the extremely laudatory reports of D'Herelle and others, as "lacking in control or based on inadequate material," there cannot be any denying to D'Herelle's claim that Bacteriophage has been the cause of saving a great many lives.

If by its use only in the intestinal affections of the human being it has done so much good to suffering humanity, how great would have been its achievement if its use could be utilised against the commoner affections. Pyogenic infections are by far the commonest ailments from which the human beings suffer. Boils, furuncles, carbuncles, cellulitis, are so common, that there is scarcely a household, where a useful cure of these diseases would not be welcome. It is a pity, however, that the Bacteriophages which proved to be of so great efficacy in the intestinal affections have not proved their worth against the pyogenic infections. Although advocated by such persons as D'Herelle, Gratia, Nelson and others, streptococcus and staphylococcus Bacteriophages have not been popular with the medical profession, specially of our country. Rakeiten, Straub, Margaret, Applebaum and others who made studies on commercial staphylo. Bacteriophage, had attributed this unpopularity to their failure in bringing about the desired effect in most cases. But they have all agreed that if any benefit is to be expected from the Bacteriophage therapy, the Bacteriophage used must be potent and polyvalent, that is, it should be able to produce lysis of the organism causing the infection.

The Bacteriophages on which they worked were not actually isolated by them, but obtained by them from several research laboratories working on Bacteriophage. Opportunities were thus lost in carefully studying the details in their nature. So the Bacteriophages obtained from the market suffered greatly in comparison with the fresh samples of Bacteriophage obtained from different laboratories. But this is what it should be in the light of the findings of our laboratory. For sometimes we have been working on streptococcus and staphylococcus Bacteriophages and have made careful studies regarding their behaviour, with a view to prepare a polyvalent Bacteriophage, that would be of therapeutic value in such common affections of humanity. To our mind it appears that the failure in therapeutic action is to be attributed to the very delicate nature of staphylococcus and streptococcus Bacteriophage and consequent early deterioration.

According to D'Herelle "One race of Shiga Bacteriophage, originally very virulent, has been held for a period of nine years in sealed ampoules and throughout the period it has remained as active as it was at the beginning." Two very active races of Coli Bacteriophage maintained their virulency for six years while a very active staphylo Bacteriophage retained its potency for three years. This is, however, denied by Asheshov and according to him, even a very virulent race of dysentery or cholera Bacteriophage can maintain its original virulence only for a few months. From D'Herelle's statement, taking for granted that it is based on correct data, it appears

that staphylococcus Bacteriophage deteriorates early in comparison with other Bacteriophages. In our experience we have also found that it is very difficult to maintain the virulence of staphylococcus and streptococcus Bacteriophages for more than a few months. Staphylococcus Bacteriophage is more delicate than streptococcus Bacteriophage. The difference in lytic action, obtained by RAKEITEN, STRAUB, MARGARET and others was probably due to the fact, that the samples of Bacteriophages which they obtained from different research laboratories were fresh, whereas the samples of commercial Bacteriophage from their own admission were purchased from the market and hence not fresh.

From our investigation regarding the nature of staphylococcus and streptococcus Bacteriophages we can conclude that if any beneficial effect is to be expected from their use, they must be freshly prepared.

ISOLATION OF BACTERIOPHAGE

In the beginning we tried to isolate staphylococcus and streptococcus Bacteriophage from sewage. Though sewage is a good source of Bacteriophage for bacteria of the dysentery and coli-typhoid Group, our attempt was not successful. After repeated failures we have been able to isolate these Bacteriophages from the stools of horses, pigeons and other sources. Fifty specimens of stools from these animals were examined and in more than seventy-five per cent. of the samples we have been able to isolate virulent races of staphylococci and streptococci Bacteriophages. The samples of Bacteriophage isolated from different cases were tested on streptococci and staphylococci isolated from individuals suffering from boils, furuncles, carbuncles, cellulitis, pyorrhœa, otorrhœa, catarrh of the respiratory tract and other septic conditions. The adjoining table (Table I) shows the action of some of the samples of stools and other filtrates on different streptococcus and staphylococcus strains.

From this table it will appear that from the different samples of stool and other filtrates we have been able to isolate a large number of races of streptococcus and staphylococcus Bacteriophages having lytic power on a number of streptococcus and staphylococcus strains. This lytic power was, however, not observed in the first filtrate. In many cases it was necessary to increase its virulence by making passages i.e. (repeated contacts with the organism) before complete lysis was obtained.

Though some workers claim to have isolated a race of multi-virulent staphylo. Bacteriophage that is, a race of staphylo. Bacteriophage causing lysis of *aureus*, *albus* and *citreus*, our experience has been quite different. None of our virulent staphylococci Bacteriophage could lyse a good many strains of staphylococcus. Some samples as shown in the table have been able to lyse only a few strains of staphylococcus aureus and albus but none could lyse staphylococcus citreus. With regard to streptococcus also, the filtrates behaved exactly like staphylococci. One peculiarity we have noticed regarding both streptococcus and staphylococcus Bacteriophage is this, that a race of Bacteriophage virulent say for a strain of staphylococcus aureus isolated from a case of cellulitis could lyse the majority of the strains of staphylococcus aureus isolated from cases of cellulitis. Though we could not carry on our work in this direction for various reasons we think it is not merely a coincidence but may have some bearing on the selective specificity of these Bacteriophages.

MEDIUM

Plain nutrient broth medium or savita medium are equally good for the growth of both bacteria and Bacteriophage. We particularly prefer the savita medium because it is simpler to prepare, does not require the addition of peptone and is inexpensive. Moreover in our country many will object the intake of Bacteriophage in broth medium on sentimental grounds.

The composition of savita medium as used in D'HERELLE's laboratory is given below:—

Savita (Yeast extract)	...	...	10 grms.
Sodium chloride	...	...	5 ,,
Water	...	...	1000 c.c.

Savita is first emulsified in a little amount of water and added to the sodium chloride and water. The reaction is adjusted to pH 8.2. The medium is autoclaved at 15 to 20 pounds for 20 minutes and filtered through filter paper. During the period of autoclaving the reaction changes from pH 8.2 to pH 7.5, the medium is finally sterilised at 10 pounds for 10 minutes.

TABLE NO. I.

Sample No.	Source.	Aureus Sputum	Aureus Acne	Aureus Stool	Aureus Eczema	Aureus Pyorrhœa	Aureus Cellulitis	Aureus Furunculosis	Aureus Erysipelas	Aureus Dental	Aureus Otorrhœa	Aureus Rhinitis	Aureus Urethritis	Aureus Pus	Aureus Carbuncle	Aureus Soft Sore	Aureus Pyæmic abscess	Albus Stool	Albus Eczema	Albus Pyorrhœa	Albus Otorrhœa	Albus Urethritis	Albus Soft Sore	Albus "H"	Albus Pus	Albus Dental	Citreus	Strepto Pus	Strepto Urethritis	Strepto Stool	Strepto Pyorrhœa	Strepto Cellulitis	Strepto Eczema	Strepto Otorrhœa	Strepto Dental
1	Horse Dung	+	+	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Horse Dung	+	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+	+	0	0	0	0	0
3	Horse Dung	+	0	0	0	0	+	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+	0	0	0	0	+	0	+
4	Horse Dung	+	+	0	0	0	0	+	+	0	+	0	+	0	+	0	0	0	0	0	0	0	0	0	0	0	0	+	0	0	0	0	0	+
5	Horse Dung	+	+	0	0	0	0	0	0	0	0	0	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+
6	Horse Dung	+	+	0	0	0	0	0	0	0	0	0	+	0	0	0	0	0	0	0	0	0	0	0	0	0	+	+	0	0	0	+	0	+
7	Horse Dung	+	+	0	0	0	0	0	0	0	0	0	+	0	0	0	0	0	0	0	0	0	0	0	0	0	+	+	0	0	0	+	0	+
8	Horse Dung	0	0	0	0	0	0	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Horse Dung	0	0	0	0	+	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Horse Dung	0	0	0	0	0	0	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Pigeon's Dung	0	0	0	0	0	+	+	0	0	+	0	0	+	0	0	0	0	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Pigeon's Dung	0	0	0	0	0	+	+	0	0	+	0	0	+	0	0	+	0	0	+	0	0	0	0	0	+	0	0	0	0	0	0	0	0	0
13	Pigeon's Dung	0	0	0	0	0	+	+	+	+	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Pigeon's Dung	0	0	0	0	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Pigeon's Dung	0	0	0	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+	+	+	0	0	0	0	0	0	0	0	+	+	0	0	0
16	Pigeon's Dung	0	0	0	+	0	0	0	0	0	0	0	0	0	0	+	+	0	0	0	0	0	0	0	0	0	0	0	0	0	+	+	0	0	0
17	Pigeon's Dung	0	0	0	0	0	0	0	0	0	0	+	0	0	0	0	0	0	0	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Ganges Water	+	+	0	0	0	0	0	0	0	0	+	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+	+	0	0	0	+	0	+
19	Ganges Water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+	0	0
20	Pus	+	+	+	+	+	0	0	0	0	0	+	0	0	+	0	0	0	0	0	0	0	0	0	+	0	0	0	0	0	0	0	+	0	+

The + mark shows lysis of bacteriophage on strains of Bacteria.

TABLE No. 2

The action of Bacteriophage on hæmolytic and non-hæmolytic strains of staphylococcus and streptococcus has been shown

	Total Number	Staphylo. Aureus non-hæmolyticus	Staphylo. Aureus hæmolyticus	Staphylo Albus non-hæmolyticus	Staphylo Albus hæmolyticus	Streptococcus non-hæmolyticus	Streptococcus hæmolyticus
Complete lysis	63	18	30	1	3	4	7
Partial lysis ...	6	—	—	1	5	—	—
No lysis ...	33	10	4	2	8	6	3
Total No. of str.	102	28	34	4	16	10	10
Percentage of lysis	67·6	64·3	88·2	50	50	40	70

Bacteria

We have studied the action of samples of Bacteriophage on 102 different strains of streptococcus and staphylococcus. Of these 78 were strains of staphylococcus, and 24 of streptococcus. Out of the 78 strains of staphylococcus 62 were strains of staphylococcus aureus and 20 were of staphylococcus albus. Of the 62 strains of staphylococcus aureus 47 strains were recently isolated from acute infections and 15 were old stock strains. Among the 47 strains, 29 produced strong hæmolysis when cultivated on ordinary agar to which 4% horse blood had been added and of the 15 stock strains 5 only produced hæmolysis. All the strains of staphylococcus albus excepting 2 were old stock strains. The result of our study regarding the action of Bacteriophage on these strains are given below.

It will be seen in table No. 2 that the chances of phage therapy are much better in infections with hæmolytic strains than non-hæmolytic ones. It has been repeatedly observed that staphylococcus aureus and albus isolated from acute infections are generally hæmolytic. Regarding staphylococcus aureus it may be definitely said that the hæmolytic strains are particularly susceptible to Bacteriophages and the resistant strains are generally of the non-hæmolytic type. Acute infections with staphylococcus generally yield on culture a strain of staphylococcus aureus because in 49 new cases in our series we have been able to isolate 47 strains of staphylococcus aureus and only 2 strains of staphylococcus albus. Staphylococcus aureus is more susceptible to the action of Bacteriophage than staphylococcus albus. From the above table it will also be seen that streptococcus hæmolyticus is more susceptible than streptococcus non-hæmolyticus.

Preparation of Bacteriophage for therapeutic use

To be of use, Bacteriophages must be polyvalent. This can be done by taking a number of flasks each containing 500 c.c. of savita broth and inoculating each flask with one drop of fresh broth culture of the individual organism, using one flask for each organism. About 1 c.c. of highly virulent Bacteriophage, having complete lytic power on the strains taken, as previously tested, is added to each flask containing the bacterial mixture. The flasks are then incubated for 18 to 20 hours and the contents of the flasks that have been completely clear are mixed and filtered through L_5 Chamberland candles. The filtrate is then tested against all the organisms used for the preparation of Bacteriophage. A Bacteriophage prepared in this way is able to bring about lysis of the strains used in its preparation. Plates No. 1 and 2 show the action of different races of Bacteriophage on a few strains of streptococcus and staphylococcus. The action of a polyvalent Bacteriophage on a number of different strains of streptococcus and staphylococcus has been shown in plates No. 3 & 4.

While concluding we like to emphasise that failures in Bacteriophage therapy have more often been due to failure in selecting the right type of cases, than merely in the intrinsic defect of the Bacteriophages. Undoubtedly, before using Bacteriophage we must be sure of its potency. But we should never forget the principle of Bacteriophage therapy, viz, that the organisms causing the infection must be susceptible to the action of Bacteriophage. Haphazard application of Bacteriophage to any infection cannot be expected to yield anything but haphazard result. For Bacteriophage therapy to be intelligently applied, close co-operation between the laboratory and clinic is essential. Culture of specimen from patient must be made to determine the causative bacteria and the organism must be tested for its susceptibility to Bacteriophage, before Bacteriophage therapy is to be applied. A careful study of the case, before, during and after treatment with Bacteriophage, with co-operation of the laboratory should be made and only through such studies can one come to the correct conclusion as to the value of Bacteriophage therapy. This is, however, not always possible for the general practitioners. They should have to be guided by the

PLATE 1

PLATE 2

In Plate No. 1 and 2 the action of different races of Bacteriophage has been shown on different strains of Streptococcus and Staphylococcus.

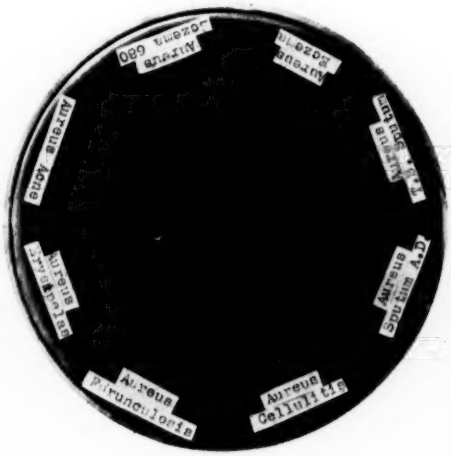

PLATE 3

PLATE 4

In Plate No. 3 and 4 the action of Polyvalent Bacteriophage has been shown on different strains of Streptococcus and Staphylococcus.

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findings of people, connected with hospitals and other institutions where co-operative study with laboratory people is possible. The duty of a laboratory producing Bacteriophage becomes all the more responsible and all attempts should be made to render the Bacteriophage as much polyvalent as possible. In spite of such cares, Bacteriophages may not always produce beneficial results but that should not be the reason why it should be so uncharitably given the stigma of " No good."

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HEADACHE

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Pain in the head—i.e. pain which we refer to the interior of the skull. It is distinctly a mental interpretation of some abnormal and generally harmful process which is occurring in the organism. We cannot class it as a sensation but rather as the perception and interpretation of sensation by the mind.

It is not certain in which portion of the central and peripheral nervous system can headache originate, but this is known that all headaches are perceived in the innervation area of the trigeminus and of the sensory branches of the upper cervical nerves. Very severe headaches are associated with all intra-cranial diseaes leading to irritation of the meninges—particularly the dura mater.

Headache in the strict sense of the term is pain felt in the interior of the skull as the result of irritation of the dural branches of the 5th nerve.

It may be unilateral or bilateral. When bilateral it generally is an indication that the underlying cause is of systemic origin. While if it is unilateral, as a rule it is an indication that the cause or causes acting to produce it are also unilateral in this origin, and it will be wise to look for the cause in organs associated with the skull, i.e. the eyes, ears, nose, teeth, and also the throat which in many cases is at fault.

I will not go into the location of the pain caused by eye-strain, intranasal or sinus defects, etc., but this is an important point that pain due to nasal obstruction is in the region of glabella and will be relieved by a cocain-spray or by steam inhalation, etc. Inflation of the middle ear relieves headache when due to the ear.

Headache may be a comparatively independent affection and remain so throughout the greater part of life. Although in such case it may sensibly prejudice the enjoyment of existence and interfere in no small degree with the capacity for work it is nevertheless, in this form, no dangerous evil, nor threatening to life. But here also, as we shall see, precise diagnosis and differentiation of individual varieties are by no means always easy, although these are essential preliminaries to an efficient treatment. On the other hand, headache is one of the commonest symptoms of the most diverse complaints. Mild and severe, acute and chronic—there is hardly an organ in the body damage to which is not accompanied by symptomatic headache, and in some of these cases it may stand in the foreground of the whole clinical picture.

It may be the first sign of a severe disease. For all these reasons every case with the complaint of headache must be submitted to a minute and complete examination. Most of us dismiss such patients with a superficial examination or none at all and prescribe the first anti-neuralgic remedy occurring to us. Not only the nervous system but the organs of the thoracic and abdominal cavities, pulse, blood, urine, eyes, nose and throat must be carefully examined.

(a) Where is the pain?—in the forehead, eyes, temples vertex or occiput. Unilateral or bilateral, superficial or deep, etc.

(b) What is the nature of the pain? Is it only a pressure, a constriction, sense of weight or emptiness in the head? Is the pain dragging, tearing, boring or stabbing, etc? Is it accompanied by nausea?

(c) At what time does the headache usually begin? Towards evening, or at night? Does it always occur at the same time? What is its intensity —Is it worse by stooping, masticating, exertion, etc.?

(d) Ocupation of the patient, hours of work. Are the rooms properly lit and well ventilated or not? Does the patient work under the same conditions of temperature? In the case of women one must enquire about washing of head and how the drying of the hair is effected. History of any head injury. Habits about smoke and alcohol, any history of rheumatism. Any complaints regarding eyes, ears or nose: tinnitus, etc., eye sight—distance and reading.

(e) Any family history of headache? Any history of epilepsy in the family?

(f) How long has the patient suffered from headache—from childhood, from youth, etc.?

Besides the above informations one should always examine the cranial muscles for indurations and swellings at their attachments, particularly to the mastoid process and the nuchal lines.

The pupillary reactions, ocular movements, corneal and pharyngeal reflexes, movements of palate and throat should also be looked into.

Examination should be made for Rombergs' sign. The skull should be carefully examined if there is history of injury. Of the organs of special sense, eyes should be first observed. The most important examination in this respect is the ophthalmoscopic, particularly with reference to the possible existence of optic neuritis or renal retinitis.

It should be an unalterable rule that with every headache of considerable severity and duration the fundus oculi should be examined. The remaining ophthalmic examination, such as that for refraction, astigmatism or similar error should be entrusted to the specialists. I would suggest the same with regard to a detailed investigation of the nose and its accessory sinuses and the ears.

Besides the examination of the rest of the body, urine should be examined for albumin and sugar and if this headache prove intractable one must not shirk repeated examinations.

Patients often show surprise at the number of questions put to them and at the examination of the body as a whole, but one should not be distracted by this and must explain the necessity of such a course of action.

It is often possible keeping before one's eyes the classical varieties, rapidly to come to a decision.

CLASSIFICATION OF HEADACHE

A headache that prevents sleep is organic, while that which does not interfere with sleep is functional. This is true in most cases, but any severe pain may interfere with sleep.

Supra-orbital headache in the planes should arouse suspicion of malaria. Occipital and nuchal headache leads to a question of nervous strain and of cerebellar tumours. This also occurs in cases of heat-stroke. Sometimes the question of differentiation of neuralgia and headache offers difficulties, specially as tenderness may be present with headaches. But the character of the pain, and strict limitation to the area of distribution of the nerve in question are usually sufficient though it is a question whether headache itself is not often a neuralgic condition of the meningeal branches of the trigeminal nerve.

The headache may be frontal, parietal, temporal or occipital. The seat of pain also depends upon a predisposition to pain in a certain part of the head.

The character of pain varies in headaches due to various causes e.g., it may be dull and continuous or rendered worse by coughing, singing, bright light, noise, etc.

Even though the fact must be emphasized that headache, pathologically speaking, has no individual entity as a disease, it would be contrary to facts to deny that this symptom very frequently persists a long time as the sole or most prominent one, and must be regarded as an entity from the point of view of differential diagnosis. I will, therefore, deal with those forms of headache which occur most frequently and upon the diagnosis and treatment of which one has daily to decide.

The most independent form of headache is the migraine otherwise known as hemicrania. This is an entity which requires separate exhaustive discussion. Suffice it to say that in this the pain is, as a rule, unilateral. It is violent burning situated over the eyes, in the forehead and above it and sometimes also in the eye itself. The attack is generally preceded by an aura. This aura is generally sensory in nature and usually involves sight or touch. Other senses are not affected. It is often a disturbance of vision—scintillation or scotoma. During the attack the patient feels best if he can be left alone and quiet in a darkened room; glaring light and noise pain him. All these circumstances may cause the patient to believe that his eye is affected. The pain rises pretty rapidly to a considerable pitch and usually lasts for from half a day to a full day; then nausea ensues and frequently vomiting; whereafter the patient feels better and the attack comes to an end. But not all attacks of migraine have this typical course. These attacks occur usually not oftener than once or twice a month and with increasing age grow milder and less frequent.

Neurasthenic headache is the commonest headache after migraine. It is a higher pathological degree of headache from which any healthy individual may temporarily suffer after over-exertion or exhaustion, particularly mental. It is a part of the clinical picture of constitutional and acquired neurasthenia but not infrequently exists for years as the only symptom

complained of. The pain may be located in the head, behind the eyes or sometimes in the eyes themselves. The discomfort often sets in within a few minutes after reading or doing any fine work. Patients sometimes feel a sense of pressure on the head or a band round it.

Nodular Rheumatic or Induration Headache

Generally occurs in women of middle or advanced age. They have been almost invariably free from any kind of severe headache in childhood and youth. They have tried popular anti-neuralgics, mostly with good but transient effect. As a rule the pain is persistent and severe and involves the whole head, generally beginning in the occiput and the nape of neck and frequently radiculating towards the back or shoulders. It does not cease at night. There is no nausea or vomiting. The patient is generally reduced a good deal.

Exposure to localised chill from washing the hair, unavoidable changes of temperature, draughts, excessive perspiration after exercise without the opportunity of changing are frequent causes. In these cases we can generally feel nodules in the occipital area and the nape of the neck ranging from the size of millet seed to that of a bean. They are almost all very tender to touch. Callosities or infiltrations can frequently be made out in the insertions of muscles in the various parts of the head, the mastoid process and the nuchal lines. These headaches are generally relieved by heat and gentle massage of the thickenings and are worse by cold wind or cooling applications.

Headaches associated with diseases of the Eye

Apart from the pain which radiates from the eye to the head, e.g., in cases of severe infiltration or ulceration of the cornea, acute iritis, etc., actual headache may also emanate from the eyes even when the latter are not diseased. This being the case, for instance, in headache occurring in hypermetropes, or astigmates, the eyes are strained.

If, therefore, a patient complains of frequent headaches the physician treating him should always think of the possibility of their origin from the eyes. One sees many patients referred by friends and colleagues merely on account of headache and in order to determine whether the eye has anything to do with the headache. In a definite way this can be done only by means of a precise examination of the eyes.

Headaches emanating from the eye can easily be recognised when the eyes are inflamed, weeping, photophobic or sensitive to pressure. But often the objective changes in the eye are slight—in fact they may be actually absent at the moment of examination. This is particularly the case in prodromal glaucoma.

The prodromal attacks usually occur in the evening and the doctor often sees the patient after the attack has elapsed and finds nothing apparently abnormal with the eye. A precise history always affords assistance. This headache occurs generally in old people and is often produced by excitement, visit of friends, etc., and the patient is generally regarded as nervous. There may be associated disturbances of vision consisting of some clouding of sight and the appearance of coloured rings round lights. But these disturbances are slight and occurring in one eye only are liable to be overlooked by the patient. The examination of the eye then usually shows hypermetropia, a shallow anterior chamber, increased intraocular pressure and perhaps easily elicited arterial pulsation in the retina.

Headaches in which there is nothing to be seen in the eye externally originate in errors of refraction—hypermetropia, astigmatism, anamolies of accommodation and the disturbances of muscular balance, especially esophoria. Such headaches usually occur in the afternoon, i.e. after prolonged use of the eyes and hence are never present in the mornings on waking up. These patients often complain that the print swims after prolonged readings, and patients with muscular imbalance complain that occasionally the lines become double and run into each other. Small errors of refraction generally cause more discomfort to the patient than the big errors.

Nose and Throat

Affection of the sinuses is often accompanied by headache. This is one of the common and significant signs of sinusitis though it may be present even when the middle turbinate presses against the septum nasi. It is generally unilateral or at least more pronounced on one side. This headache is increased by stooping forward and upon sudden jarring of the body. Such is not the case in ocular headaches. The headache due to the frontal sinusitis may assume the form

of sharp shooting pains in the eyes or it may be dull, heavy and nearly constant. In the acute form of frontal sinusitis, pain begins at 10—11 o'clock in the morning and abates at 3—4 o'clock in the evening. Pressure under the floor of the sinus at the inner angle of the orbit elicits pain in all these cases.

In cases of deflected septum if the deflection is high, frontal headache is usually present and is more severe in the morning upon working.

In spheno-palatine neuralgia or lower half headache there is pain about the eyes, upper jaw and teeth extending to zygoma and temple generally with earache and pain in the mastoid region.

Another variety of headache of nasal origin is the vacuum frontal headache. This is usually frontal, low grade and made worse by the use of eyes for close work. The nose contains no pus and no pathology other than a possible redness and swelling of the nasal mucosa in the region of middle turbinate. This is explained like this:

The inlet of the frontal sinus being obstructed, its contained air gets absorbed and a vacuum is produced. Tenderness or a pressure on the floor of the frontal sinus may be present.

Inflamed septic tonsils and adenoids are often a cause of low grade dull headache.

Acute and chronic otitis media often causes headaches especially when the discharge gets pent up. Chronic adhesive catarrh sometimes gives rise to headache.

Headache in Brain Diseases

Headache is the most constant and is the most important general symptom of cerebral tumour. Every protracted, obstinate headache must arouse suspicion of this disease. It is described as dull, boring or gnawing and always referred to the interior of the skull. The patients often feel as though the head were about to burst. It can best be compared with migraine and like the latter is often accompanied by vomiting. But in this the pain is more severe and vomiting of a projectile character and there is dizziness. Accompanying the headache are generally choked discs and centracted pupils. Tumour of the brain may be syphilitic, tubercular, hydatid, carcinoma or sarcoma or it might be a bone formation within the cranial vault. A brain abscess will cause headache in the same way as a tumour.

Similarly, organic meningeal changes due to adhesions, inflammation and hæmorrhage cause headache.

In cerebral syphilis the characteristic sign is the Argyll-Robertson pupil, and Jacksonian epilepsy occurs in the syphilitic meningitis. Blood examination, however, is also an important diagnostic aid. Cerebral arteriosclerosis causes a dull headache with a feeling as if a hand were compressing the head, worse in mornings, diminishes as the day advances. A peculiarity is generally noticed in these cases that the blood pressure is lowered in spite of the arteriosclerosis. This is probably the result of secondary cardiac weakness.

The Headache of Hysteria

The typical hysterical headache is the so-called clavus hystericus, the hysterical nail. They feel as though a nail were being driven into the skull, generally at the vertex. This is commonly associated with pronounced hyperæsthesia of the scalp, and an endless variety of parasthesia—pricking, burning sensation, etc. One can easily find the so-called hysterical stigmata in these patients, and the absence of corneal reflex, anæsthesia of the palate, hemi-anæsthesia and hemi-hyperæsthesia.

The complaints are often fantastic and exaggerated.

Headaches due to eruption of wisdom teeth, caries of teeth are fairly well-known. There is gnawing headache.

Pyorrhœa alveolaris may cause headache through toxæmia.

Toxæmia Headache

May be due to exogenous poisons like alcohol, nicotin, lead, arsenic, amyl nitrite, etc., or endogenous ones as toxins of pneumonia, typhoid, influenza, small-pox, Bright's disease, diabetes, gout and starvation.

Toxins act by altering the intracranial pressure, i.e., by their action on the vasomotor and possibly also upon the sensory filaments of the meninges.

These headaches are generally associated with certain amount of sluggishness of intellect. They are generally relieved when the patient reclines.

Anæmia may cause bad headaches due to want of nutrition.

Cerebral congestion is another true cause of headache by increasing the amount of fluid in the brain.

Pain is of a throbbing nature and feeling of fulness of the skull cavity marked on coughing or jolting of the head. Headache may also be due to an actual as well as a relative increase of C.S. Fluid. This increase may be localised either to meninges or the ventricles.

Reflex causes of headache are the last to be considered but they are not by any means the least important. These headaches are due principally to organic disturbances of the uterus, ovaritis, decayed teeth, digestive disturbances. Reflex headaches are due to irritation of the nerve centres and owe their presence to circulatory changes in the brain. Under this heading it is also proper to consider headaches which follow intense irritation of the organs of special sense, for in many cases headaches follow a low noise, exposure to an intense light, or a strong and disagreeable odour. These headaches are probably reflexes from the centres affected to the centres of the cutaneous area in which the pain is felt. Hunger headaches are due to a lack of nutrition in the brain cells of the cerebral cortex.

Headaches also follow excessive venery and are probably due to cerebral fatigue. To the same class belong the headache which follows loss of sleep occurring in those who have been up all night and in those who have missed a mid-day nap.

There are, I know, still other causes of headache which I have failed to recollect just now.

Pathology

It has not been definitely proved as to what structures are involved in headache, but is is probable that many different structures may be involved. The brain itself is said to be insensitive to pain. The meninges are however highly sensitive to pain and this may be provoked by pressure on them, e.g., by a tumour or by congestion from vascular disturbances, chronic inflammation or thickening with pressure upon the nerves which pierce it.

The pericranium or epicranium are all at times the seat of headache. Small apertures exist in the aponeurosis of the cranial muscles, in the periosteum of the skull, and in the skull itself through which blood vessels and nerves inside and outside are closely related and very little swelling suffices to produce pressure on them.

The pericranium is continuous with the dura through these apertures the sutures and through the orbit and sphenoidal fissure.

The holes in the aponeurosis of the occipitofrontalis are less yielding on the top of head. There is, therefore, greater liability to pressure on nerves and blood vessels here than nearer its margins where the apertures are loosely woven. The front half of head is supplied by the fifth, the posterior half by the occipitals, the greater auricular and the Arnold's nerve.

Prognosis

It depends on the cause and the ability to relieve it. Headaches are rare in old people. If they existed previously they tend to become milder or to disappear. Headaches developing in old people most often are due to nephritis or arteriosclerosis and glaucoma and the prognosis is not bad. Nasal diseases often cause impairment of cerebral functions, defects in memory and concentration. Prognosis is quite good provided proper treatment is carried out. Gout is often preceded by headaches for many years but after the gout is fully developed—headaches become uncommon.

Violent and persistent headaches may lead to hypochondria.

Treatment during the Attack

The patient should be kept quiet in bed in the majority of cases, if headache is severe. Some patients, however, find more comfort in walking constantly.

In severe cases a dark room is preferred. Many cases are relieved by analgesics, e.g., aspirin, acetanilide, pyramidon, etc. Great care should be used in giving such drugs as acetanilide, etc., during menstruation as they are particularly toxic at this time and are known to give rise to cyanosis, dyspnœa and cardiac weakness.

During a severe attack the stomach often refuses to absorb anything—if several doses are given during a headache usually they are all absorbed at one time when the headache terminates thereby causing toxic effects. It is usually better to protect against the depressing influence of these drugs by combining caffeine or caffeine citras or strychnine with the analgesic.

When the headache is due to the eye or nose, lying down with a hot water bag over these regions for about half an hour will often give relief to the patient.

In nasal obstruction, inhaling steam, or a cocaine spray gives immediate relief. A drop of cocaine solution in the eye will relieve a headache due to the eye inflammation. When the headache is due to the ear, cocaine solution in the ear, a hot water irrigation or even a hot water bag is often helpful.

In induration headache manual massage and stroking the induration is very helpful in affording relief. Rubbing with spirits of camphor or a menthol cone give much relief. Mustard plaster may be applied to the back of neck and sometimes a fly blister on the temple will give prolonged relief when the pain is located there.

In severe cases hypodermic use of morphia, while in hysterical cases an injection of sterile water usually suffices.

Frontal headache with constipation is relieved by mag. sulph., headache just above the eyebrow without constipation by acids and headache higher up without constipation by alkalies.

In cases with Bright's disease or diabetes treatment should be directed against these diseases.

Between the Attacks

The various etiological factors should be considered and corrected. In some cases no cause can be found and the treatment must be directed to general hygienic measures and the relief of pain. Even when the cause is found, it is sometimes necessary to find the cause of this cause, e.g., hetrophoria due to adductor weanness, may be due to anæmia which in turn may be due to an early mild tuberculosis. The headache and the hetrophoria will disappear after improvement in general health.

In cases due to errors of refraction, no case is properly tried until (a) glasses are properly centred, (b) their continued adjustment is practised, (c) the patient looks as much as possible through these centres, (d) efforts to strain the eyes are avoided. (e) use of glasses is constant.

In anæmic cases iron and arsenic are valuable, in toxic cases laxatives and diuretics should be used. Diuretin has been advised in cases of arteriosclerosis. When the blood pressure is high the fluid intake should be restricted.

Uterine diseases and displacements should have appropriate attention.

Diet is necessary in cases of chronic constipation also in gouty-rheumatic diabetic and kidney cases.

A change of *climate* is often valuable, especially in cases when the patient is over worked and worried and therefore needs relaxation. It does not matter much where the patient goes though it is advisable to try a climate opposite to one in which ordinarilly he lives.

Cases which sleep poorly will do well at a seashore.

Hydrotherapy is valuable in toxic, rheumatic and gouty cases. Hot foot baths are good in congestive cases.

Organotherapy. In neurasthenic cases and especially those of sexual origin, tesicular or ovarian substance is valuable. When menses are excessive mammary substance should be used and if deficient ovarian substance. In syphilitic cases iodides, mercury and arsenic are indicated.

Surgical. In nasal obstruction and accessory sinus diseases, operations for the relief of headache is indicated.

The S.M.R. or removal of middle turbinate may relieve long-standing cases.

General management. Daily exercise, sleeping in an airy place, bowels kept reasonably open and in toxic cases an occasional dose of calomel should be given.

PUERPERAL FEVERS AND THEIR TREATMENT

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Puerperal sepsis is a very common disease in our country. It is caused by various organisms. Some of them cause sapræmia and the others penetrate through the tissue and cause septicæmia and septicopyæmia. KRONIG and MENGE found staphylococci in the vaginal smears, GERHARDT bacillus coli, DOLIN and LINDENTHAL bacillus ærogeneous capsulatus, BOHDANOWICZ JASINSKI bacillus perfringens while ELIZABETH streptococci and occasionally diphtheria bacilli, with their local processes in the cervix, endometrium and tubes. They can spread through the blood causing thrombophlebitis, pyæmia and septicopyæmia and through the lymph-channels causing metritis dessicans para and peri metritis and peritonitis. Gas phlegmone (BIER) is not a very common disease. PFALZ and CROOK in China have published a few cases in modern literature.

Bacteriologists like ROSE WHITE, SCHOTTMULLER, COLEBROOK, HARRIS and BRAUN hold the streptococci hæmolytica chiefly responsible for the puerperal infection. SMITH is of opinion that there are no streptococci originally in the vagina but only in the throat, tonsils and nose and are carried from there to the vagina. ROSE and PAINE hold the nurses responsible and ROSE's results are as follows:—

	Throat smears	Vaginal smears
Nurses	42%	
Patients before birth	26·3%	2·4%
Dry labour	17%	2·6%
In puerperium	32%	6·5%

FRITZGIBBON found streptococci in the vagina in 27 out of 50 women, TAYLOR and WRIGHT streptococci in 3% of cases and 1:10 of these got infected. BURTWHITE and ARMSTRONG found streptococci occasionally in the absence of disease. According to PAINE, WRIGHT and NIXEN streptococci hæmolytic present in vagina and nose and throat have the same serological reaction and there is no evidence to believe that the non-hæmolytic could be converted into hæmolytic in the vagina (COLEBROOK).

According to ROSE the micro-organisms reach the vagina from the throat by a droplet infection. According to MURRAY and FARQUHER and COLEBROOK droplet infection plays no role and according to the latter the infection is carried through the handkerchief. LAUTUIJOUL and DECLAUME attribute sepsis to bad teeth and HORN to sexual intercourse in the last week before delivery. In our country so many get septic because the *dais* put *ghee ki gadi*, *gur ki rori* or *sund* or *suhaga* in the vagina.

LOISER found the uterus sterile after delivery and 25% were infective on the first day and 100% on the third and fifth day. The uterine infection increases upto the 5th day and decreases later. COLEBROOK and RONALD HARE could show that the uterine discharge shows on the 3rd day strongly reduced alkaline reserves and the loss of antitryptic action and this favours the possibility of infection. The organisms seldom grow in the blood, but if at all there is a growth it is very dangerous. VERON and BANSILLON found a rise of temperature after champaigne and beer. Even untouched and very well prepared and well-handled cases get infected and one wonders how. One is more inclined to think that it is an autogenous infection. It is not necessary that the person having streptococci in her vagina should get the disease. There is perhaps something in the air which a person in puerperium takes up and gets infected.

Clinically puerperal fevers manifest themselves in manifold forms, usually with rigors, sharp rise of temperature and correspondingly rapid pulse. The symptoms may be accompanied by pain in the back and in the vagina (MEYER) on account of œdema of the outer genital organs. Some intelligent patients complain of general malaise a day earlier. They may have severe headache and there is usually a rise of pulse rate with or without a corresponding rise of temperature. An obstetrician should be very careful about headaches and early rise of pulse rate. They should not be treated lightly just by *khoa and rabri*, etc, on the head, as some of the doctors do, till

sepsis can be absolutely excluded. According to Remingstone the pain in the uterus is a cardinal symptom and tenderness the cardinal sign of an obstructive viscus. The after pain persisting after the second day is very suspicious of puerperal sepsis.

The vagina is solely responsible for the spread of organisms through its early ruptures, dry labours and the lower placenta-site (Sommerville). The infection is carried further through the lower uterine lymph channels (Farabeuf and Delbet) and blood vessels of the uterus and tubes; all organs may get infected. Voron and Brochier and Laffont, etc. described infection in joints. Foederl found in a case on the 6th day of delivery muscle abscesses. According to their clinical picture cases can be divided into 8 groups.

1. Rise of temperature and high pulse rate for a day with stoppage of lochia. They get alright on application of heat.

2. There may or may not be stoppage of lochia. The uterus may be normal. Fever persists for a day or more with high pulse rate with or without remissions and the patients ultimately die. In such cases it is a very virulent streptococcal infection and nothing can be done by the way of treatment.

3. There is a purulent discharge, fever persists for days and days together and all sorts of complications may arise. There is no rest as long as the uterus is not fully evacuated.

4. There is severe headache with rigor and high rise of temperature and pulse rate. Further the patients may get pains in the pleural region, loss of vision, abdominal pains, muscular pains, stiffness of the vertebræ and joints due to the spread of small emboli in the small vessels. Big emboli may occur and cause the well-known picture of phlegmasia alba.

5. The high rate of temperature and pulse may be accompanied by diarrhœa, flatulence and tympanitis. There is no defensive rigidity of the muscles and the abdomen moves with respiration. There is no pain in the lower abdomen. In one case there was pain only on movement of the uterus. Rivett le Carnac opened the abdomen and found large amount of pus full of streptococci. It is rather difficult to diagnose the localised peritonitis (Oldfield and Pyrah and Rivett le Carnac).

6. Patients complain of severe pain in the region of adnexa. On palpation a tumour is found on the right and left of the uterus. The uterus and tubes may be swollen; para and peri-metritis with or without pus formation, salpingitis purulent or non-purulent and metritis dessicans may occur. It may also cause general peritonitis with muscular rigidity.

7. There is a sudden rise of temperature with severe rigors and remissions and accompanied by pain in kidney region and bladder. Examination of the urine reveals pus cells also ureter cells and albumen (pyelitis). Pyelitis may have existed even before delivery. If the infection involves the kidneys only, casts and blood corpuscles are present.

8. High rise of fever with quick pulse and rigors coming on irregularly. Urine is highly acidic and contains B. coli. According to Takayama there is a foamy secretion from the vagina in B. coli infections. Dercinsky describes cases of B. coli infection with pain in the joints, herpes and skin necrosis on the fingers.

The heart is affected in all these groups. There is a hypotensive tendency on account of disturbance of the vegetative nerves and cardiovascular system (Garcia). Lung complications may arise.

Blood-count :—The count of white blood cells goes up very high even upto 20—25—30 thousand. Polymorphs are increased. According to Dietrich there is a decrease of platelet count. There is a slight rise of calcium and potassium in the blood (Rafalkes and Koroleva). Hazay could show in animals a decrease of alkaline reserves. Green could show a low reserve of vitamins. Tate Gniseppe has given the following reactions :—

1. Bilirubin at first very high decreasing proportionately to improvement and coming to normal on restoration of health. The serum of a blister raised by applying cantharidine gives a lower of monocytes first but they increase to about 17—20% on improvement.

2. (*a*) In severe septicæmia bilirubin under normal constantly.

(*b*) Monocytes at the most 1—2% in blister serum.

These changes are due to different reactions of the reticulo-endothelial cells. In Group 1 (above) there is hyperplasia and hypertrophy with hyperfunction of the reticuloendothelial cells; in Group 2 there is paralysis of the cells and it is found in peritonitis and fulminating sepsis (Scheyer). Scheyer found these stages in human beings and Louros in

animal experiments. The third stage according to them is found in the human beings or animals who die sometime after the disease. All these stages, *viz.* hyperplasia, hypertrophy and necrobiotic processes are found in the reticuloendothelial cells.

The reticuloendothelial system originates from mesenchyme and covers the inner surface of vessels. The cells are met with as the capillary endothelium of the liver, the so-called Kupffers' cells and the endothel cells of the spleen, supra-renal glands, kidneys and lungs. It is the protective element of the body (Atler and Singer). According to Aschoff, Schittenhelm, and Goldman, Kuzynsky, Siegmund, Dietrich and Standenath the reticuloendothelial system takes an important part in the metabolic processes and is normally connected with the immunity processes.

The prognosis of the disease is rather difficult to say, because the disease can be sometimes so fulminating that the patients die within 4—5 days of infection. We can judge it to some extent by the number of rigors. Till the third rigor prognosis is favourable but after the fourth unfavourable (Batisweiller). Tata Guiseppe estimates it by bilirubin in the blood and monocytes in the blister serum. The prognosis becomes favourable when the platelets have reached 100,000. According to Schulten the prognosis is very bad in septic endocarditis and acute thrombophlebitis. Subacute and chronic thrombophlebitis get well spontaneously. Some of the patients die of Frankæls' bacillus infection. The prognosis of B. coli infection is quite favourable.

The proplylactic measures lie in looking after the nurses (Colebrook). Their throats should be free from any streptococcal infection and their hands should remain sufficiently aseptic. A special soap has been suggested for cleaning them. The masks suggested by Rose are good for nothing. Matusovsky suggests the looking after of the midwives. They must have clean clothes and very clean hands. Repeated examination by them should be forbidden. In no case must they insert *ghee ki gadi* or *gur sund* or *suhagas*, etc., in the uterus as so common with our *dais*. Schottmuller suggests the treatment of those women who have never had puerperal fever but have a local wound infection and are so called carriers of streptococcus hæmolyticus.

The labour room should be airy, clean, neat and tidy. All the furniture must be removed and the windows remain open. The patient must get cleaned and freshly ironed bed sheets. Her nails should be absolutely clean.

The diet before delivery should be rich in vitamins. Raw vegetables and fruits should be given liberally. Mellanby suggests vitamin A in the form of Adexolin because according to Green, Pinder, Davis, and Mellanby vitamin A is anti-infective and where absent or deficient in diet-multiple foci develop resulting in death.

Sommerville suggests presterilisation of vagina with mercurochrome-glycerine, Zimplini suggests quinine as a prophylactic measure. It is rather a dangerous suggestion, because quinine causes contraction of uterus. Dalsace Jean suggests prophylactic transfusion of immune sera. Mizonova advocates septo and staphylococcal vaccine.

Although science has made such a great progress yet nothing specific has been found for puerperal fevers. Gæssler suggested anti-streptococcal serum, Louros and Scipiades a continuous infusion of Warnekos,—Louros-Beckers serum: Benson and Rankin serum intravenously; Sorrotini 30—40 c.c. antiserum daily intramuscularly; Benson and Peralta administration of serum within 72 hours of the onset of the disease; Lazares, Barlow and Chamberlain fresh human serum. Benson and Rankin treated 116 cases half with and half without streptococcal serum. The rate of mortality was 75% in the former group and 68% in the latter group.

Spizito suggested 0.25% emulsion originally prepared by Bassel and Poincloux made of streptococci, staphylococci, gonococci and colon bacilli into the wall of the cervix. Le Lorier used vaccine made of staphylococci, streptococci and B. coli. Protein therapy is very popular in some clinics. According to Schmidt it is antipyretic, antidyscrasic, diuretic, antispasmodic and antiphlogistic. Bernstine and Sorrotini suggest milk, Kuster, Yatren and some others omnadin and pyrefer.

These treatments fail because everyone of them acts a little if at all, on the very complicated defensive mechanism of the organism, serum has neither bactericidal nor antitoxic action worth the name. According to Bordet, Neufeld, Reimpeft and Deny, the serum on coming in contact with the streptococci makes them fall a victim to phagocytosis. It can stop the progress of infection if given when there are no changes in the tissues. According to Bansin and Rankin serum is clinically useless. According to Sedalin the vaccine plays no role in therapeutics.

Their results are the same as those of protein-therapy. Clinically I cannot agree with Schmidt, because the protein-therapy has never given good results in my experience. It is on the contrary harmful. That harm is in the shape of severe clinical reactions, viz., rigor, sudden fall of temperature and general symptoms of a dangerous nature. This is due to sudden changes in the physio-chemical nature of the blood (E. Sacks) Pfeiffer and Joseff could show experimentally the possibility of an increase in the natural bactericidal action in the body fluids. But it is all laboratory hypothesis.

The bio-chemist wants to achieve detoxication by the katalytic processes (Schade and Dietritch), oxidation and reduction. This is also a laboratory hypothesis and a few preparations have been suggested: (Gross and Ziegler) Euthagen, (Heyneman) Dispargen, (Leopold and Radekurt) Detoxin; (Schilling) orgochrome; (F. Gross) Cuprocollargal; (Schmidt) Electrokollayal and (Bohric) Introid.

Lots of chemicals have been suggested such as Rivanol intravenously, (Sclilling and Morgenroth) Sulfarsenol, (Ardal and Dande) Sublimat and Salvarsan, (Kehrer) Silver, (Neuegard) intraveneously, Metaphen (Born-stein). According to Colebrook and Hare arsenic treatment is useless in peritonitis. Trypoflavine was quite popular. Mercurochrome seems to have taken the place of all these modern medicines. It gives a severe reaction. Kohler and Scipiades suggested soda-bicarb intravenously but about $\frac{1}{4}$ to $\frac{1}{2}$ hour after the infection it also gave a very severe reaction. According to Hazay's experiments sodium bi-carbonate should do no good at all. Sterilsata magna (Ehrlich) is absolutely impossible with these drugs. Iodine is an old medicine and it does little good and no harm. Urotropine suggested by Serrotini and others is a good urinary disinfectant.

Serrotini has revived an old barbaric treatment of fixation abscesses by injecting 3 ccm. of pure turpentine partly in the fascia and partly in the muscle. This measure is very painful till the abscess is formed. Wendt, Weyraucj and Serrotini attribute the success to the rise of leucocytes which sometimes may not come off. Our duty should be to give comfort to the patient and relieve her of pain and psychological depression.

The treatment should be based upon the following:—

1. Saving the heart.
2. Bringing the uterus to contraction.
3. Raising the chemical activity of the reticulo-endothelial cells.
4. Raising the cellular defensive mechanism.
5. Stimulating the formation of anti-bodies.
6. Increasing blood platelets.
7. Administering substances which should in no case be harmful by producing severe reactions, etc.

With regard to 2 there should be no rest as long as the uterus is not contracted which can only happen if the uterus has been fully evacuated. Even if the uterus is absolutely free from the placental remnants the endometrium has got to be thrown out. Experience shows that it is not safe until temperature has come down to 97.5 or if it remained 98 or 98.5 there is every likelihood of its rise again.

Our first two objects can be achieved by injecting the patients every four hour with pituitrin. This is one of the medicines which would stimulate heart and uterus. If the heart is still weaker combine it with adrenalin and caffein (Jaschke) so that the patient gets 8 injections of each in 24 hours.

In some case the patients may suddenly collapse. In such cases I recommend pituitrin with camphor and hot water bottles. Thuru Rumback and Istram advocate 4.8% of isotonic dextrose solution intravenously by drop method. It feeds the sick, helps the heart, raises the blood pressure, compensates the loss of water and increases diuresis. Gross and Sernst and Schilling advocate dextrose solution for other serious patients also. Louros suggests saline intravenously by drop method. I use combined saline dextrose solution.

For serious heart collapse of septic peritonitis, suprarenin is very useful (Lange). It has to be combined with tonephen and saline per rectum by drop method to remove the peristaltic stopping action of suprarenin. The dose is 0.3 cm. every 45 minutes (Lange).

Digalen and digitalis in puerperal fevers would not do. We want immediate action. Strophanthin could be injected with glucose carefully. Bergmann has suggested camphor and believes it to be a good cardiac stimulant. Cardiazol and Hexeton are medicines of choice. Cardiazol in overdoses causes tetanic symptoms.

Another medicine which does the work of pituitrin is quinine. English authors seem to like it very

much (Ten Teachers). Its injections are rather painful, but if diluted with water one can bear the injection easily. It kills the malaria germs definitely and some others also. So this complication remains out of the way. Ergot could be given per os. Its injections are also available.

Fever mixtures are quite useful in keeping the urine alkaline and increasing the diuresis. For fevers ice bag should be applied constantly or the treatment of uterine inflammation constant heat preferably with electric pads is recommended.

For pain do not be afraid to give Morphia. Half a grain can be safely given in repeated doses. Symptomatic troubles of intestines should be treated with charcoal and turpentine stupes, etc. Skin illumination is most important. A piece of cloth soaked in water is wrapped round the breast and a piece of flannel over it. This keeps the patient very comfortable. Pleuritic pains if any are also relieved.

To keep up the vitality the patient must be properly fed by administering broth, soups, fruit juices, egg flip, tea, coffee, honey and brandy (Ruges and Walhard). Turz, Bar, Mastitz, Botzel, Fohl, Bogdanovic and Barjaktarovic suggest alcohol intravenously and Dietrich diluted alcohol and glucose.

Bogdanovic and Barjaktarovic give 80—Bogdanovic and Barjaktarovic give 80—160 ccm. of 33% alcohol. It serves the purpose of calories and according to Markov, Timofe-jev, Kustner it acts by impregnating the blood and rendering it unsuitable for the growth of micro-organism.

For the third principle of treatment Schittenhelm, Kuczyneki, Neufeld, Meyer, Watrum, Seigmund, Dietrich and Singer have tried to increase the functional activities of metabolic processes of the reticuloendothelial system with different medicines but experiments have so far not been very successful in the case of human beings.

Litwok, Rubeska, Hoffheing and Linhard suggest autohæmotherapy and it fulfils the conditions 4 to 7 (see above). According to Rubesk the quantity of protein bound on the erythrocytes which decreases a lot by infection reaches its normal value again (Litvak) and there is also increase of lymphocytes. This therapy though clinically inactive in pyelitis has never done any harm excepting in one cancer case of Zerner where it gave a severe reaction. Rubeska gives 80—180 c.c. every second day. Rajalkus and Koroleva suggest 500—1000 cc. taken from the unbilical vein of a healthy woman. Jacobson and Hyneman, Conseli, Hoche, and Kochmen advocate direct blood transfusion and Cornaldesi and Markoff 150—200 cc. of citrated blood. Rodorf Roforte recommends immune transfusion, that is the donor must be treated with polyvalent vaccine few days before the transfusion, the blood groups being determined beforehand. This treatment has not been possible in the Punjab because no body would submit to such a process.

The manual evacuation of the uterus is dangerous and curetting also. So I wash the uterus with mercurochrome glycerine every second day and try to remove the placental remnants with evacuation forceps during the glycerine injection. Glycerine has hygroscopic action and it works as a foreign body in bringing the uterus to contraction and at the same time decreases the growth of organisms. Remingstone suggests glycerine alone. I have often seen a rise of temperature even upto 104 but it falls after about 12 hours.

As soon as the temperature has come to 100 or 100.5 the uterus is carefully cleaned with blunt curette without anesthesia and cauterised with iodocarbol. Markoff, Robinson, Pontocoll and Pedro suggest the same. The curettage has never done any harm. Levi Guide suggests Ozone therapy of the uterus. Boch will wash the uterus with 250 cc. of 10% alcohol 4—5 times daily. Some wash the uterus with iodine solution and others with pot. permanganate. According to Rubeska too much treatment of the uterus is harmful. By douching a similar manipulation the uterus gets pulled, and its muscle fibres get deranged, small emboli get loose and these are brought into the circulation and the organisms spread in the loose parametric tissue. The uterus should be given as much rest as possible and the patient must also be very restful and should lie in bed with head raised upto one foot.

Azlezky and Lewitzkaja advocate biolactin in vagina. I find that very hot saline couches given with Tesses douching-bulb using 2 litres (2000 ccm.) of water thrice daily with a special bed pan arrangement with water-let-out do a lot of good, especially in cases of puerperal peritonitis, salpingitis and metritis desiccans.

Ligature of the hypogastric vein is the topic of the modern literature. Martin, Kehrer, Veredi,

ORTH, KUNTER and FELS advocate vein ligature. According to SOMMER and KOHLER the indications are: long disease with high rise of temperature, remissions and rigors, bad volumeless pulse, no appetite, and leucocytosis. Three to six rigors are the indications for this operation. KEHRER and KUSTER will operate intraperitonially TAGLIA-FERRO will wait for the symptoms. HANNES and PONT COLL and PEDRO refuse to ligature the vein. SSAZONO believes he cannot check the disease by this operation. In India such operations are not possible as the patient and her relatives will not agree to them.

GRAMPE and LATZKO suggest hysterectomy when the placenta is so adherent that it is dangerous to remove it in the natural way. According to LOTZKO further indications are periphlebitis, and rigors. KONARD suggests extirpation of the uterus with Frankæl's bacillus infection.

Surgical measures should be adopted in abscess formation, etc., when heat and antiphlogistic treatments have failed.

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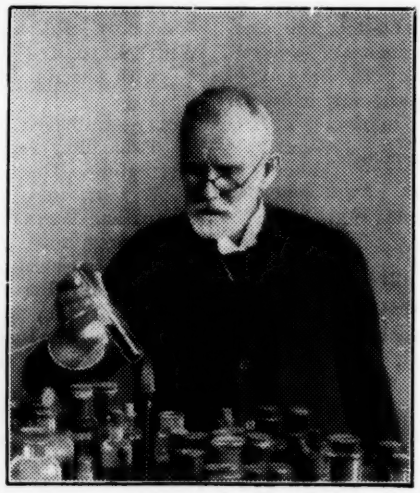
Paul Ehrlich (1854-1915)

Twenty-Five Years of Salvarsan

With the twentieth of September, 1935, 25 years have passed since the discovery of the famous '606' by Prof. Ehrlich. The discovery of salvarsan is of so far-reaching importance for the health and welfare of nations that its 25th anniversary is an excuse for retrospective mood.

The beginning of the 20th century is marked by a rapid progress in the fight against syphilis. In 1905 Schaudinn and Hoffmann demonstrated spirochæta pallida as the causal organism of the disease. In 1907 Wassermann, Neisser and Bruck gave to practical medicine the Wassermann Reaction and research work was finally crowned by Paul Ehrlich's discovery of salvarsan as a standard preparation for syphilo therapy.



P Ehrlich

Paul Ehrlich's invention of '606' was not a mere chance discovery. As Erich Hoffmann, the co-worker of Ehrlich writes: " the clue to the discovery of 'salvarsan' may be traced to the peculiar fondness of Ehrlich from his very childhood towards the dye-stuff. The fact that different fibres took up different dyes selectively as it were, gave the boy the initiative and inspiration that one day culminated in the making of ' 606.'

At the age of 24 Ehrlich as an assistant of the First Medical Clinic of the Charite wrote a paper on " Contributions to the Theory and Practice of Histological Staining." Patiently Ehrlich continued his work now specially devoting his studies to the therapy of syphilis. The report of Paul Uhlenhuth (1907) on the action of atoxyl in fowl spirochætosis and in monkeys experimentally infected with syphilis, gave Ehrlich a tremendous impetus. In co-operation with Bertheim and Hata, Ehrlich devoted himself to the research in new arsenical compounds with an action superior to atoxyl and at the same time without risks for the patients. Altogether 605 different compounds were tried and found wanting in various respects. Only the 606th preparation synthetised in the laboratories and chemically d i o x y - d i a m i n o -arseno-benzol-dihydrochloride or salvarsan as it was now called had all the properties required of an effective remedy for syphilis.

It was on the memorable day—September 20th, 1910, at the lecture room of the Albertus University in Koenigsberg that Ehrlich's discovery was officially made known to the world and it was significant that Ehrlich's friend Neisser in closing the sitting which had lasted for 4 hours should conclude that naturally the first discovery cannot be expected to be perfect in every respect but that the preparation '606' of Paul Ehrlich may be followed by a still better '606' or ' 608.' In fact salvarsan although a standard weapon in the treat-

ment of syphilis was rather cumbersome in use and the preparation of its solution required a considerable amount of accuracy and precaution. So Ehrlich patiently settled down to further investigations but it was not a preparation 607 or 608 which brought final solution but a further 300 preparations had to be tested until, two years later, Neosalvarsan or '914' saw daylight. Neosalvarsan is a condensation product of salvarsan and sodium formaldehyde sulphoxylate and stands unrivalled in the treatment of syphilis up to the present day. In fact, it is adopted as the standard preparation by the League of Nations.

Ehrlich's example has now found imitators in other countries and nowadays a number of arsenobenzols basing on the principle of Neosalvarsan are on the market, a fact which interests manufacturing chemists more than science.

With the introduction of salvarsan in therapeutics of syphilis a new era was opened up and Neosalvarsan has proved to be an effective and comparatively harmless treatment in the hands of every practitioner. It is vastly superior to older remedies such as mercury in controlling the disease and preventing the spread of the infection. One must not expect too much from these remedies. The rapid effect on clinical lesions led to the belief, which still prevails in some quarters, that one or two doses of Neosalvarsan will cure any case of syphilis. Such an idea is positively dangerous when put into practice. Only a continuous and energetic treatment in repeated courses as done as a standard procedure in many European countries will give a reasonable guarantee to cure even advanced stages of the disease.

During the occasion of the 25th anniversary of salvarsan we silently pay our tribute to the genius of Paul Ehrlich and his brilliant discovery because no other compound has been found so far which could claim any superiority over salvarsan and Neosalvarsan.

CURRENT MEDICAL LITERATURE

MEDICINE

Induced Water Retention in Diagnosis of Epilepsy

J. L. Clegg and F. T. Thorpe (*Lancet*, June 15, 1935, page 1381) repeated Jacobson's procedure of differential diagnosis between idiopathic epilepsy and hysteria, administering large quantities of water by mouth accompanied by hypodermic injection of pitressine in 16 adult epileptic subjects and seven non-epileptic controls. In all the cases excretion of urine was diminished and in one nephritic patient there was œdema of the legs and face. There was a progressive increase in weight during the treatment. A fit occured after the weight had increased by 4 pounds. Of the 16 patients 12 had fits and in the two of the four negative cases the treatment had to be stopped for vomiting and hiccup, and the remaining two negative cases were those where the fits were normally infrequent. In none of the seven controls was there any fit induced by water and pitressine.

Gastric Acidity in Chronic Arthritis

Edward F. Hartung and Otto Steinbrocker (*Annals of Internal Medicine*, Sept. 1935, page 252) studied the gastric acidity in 70 patients with chronic arthritis. They found out that achlorhydria occured in 28.6% of the cases with rheumatoid arthritis, and in 25.6% of the cases with osteo-arthritis; hypochlorhydria was detected in 17% of the former and in 3% of the latter. The incidence of sub-acidity was greater in rheumatoid arthritis than in osteo-arthritis although the latter represented an older age-group. Sub-acidity was so frequent in chronic arthritis that it must be considered an important feature in that disease.

Digitalis in Pneumonia

A. E. Cohn and W. H. Lewis (*American Journal of Medical Sciences*, April, 1935, 457) analysed 1,456 cases of lobar pneumonia treated at the Hospital of the Rockefeller Institute of Medical Research during the years 1911-1932, and have come to the following conclusions: (1) Digitalis does not appear to influence the course of events in pneumonia (2) Digitalis is beneficial in patients with auricular fibrillation and flutter, although they are quite uncertain if the administration of digitalis precipitates such trouble (3) Heart-block did not occur during the febrile period of pneumonia except in such cases who had received sufficient doses of digitalis to bring it about. With these exceptions their analysis does not confirm the view that digitalis does harm in pneumonia. On the other hand except the cardiac complications mentioned above the drug has got no beneficial effect in lobar pneumonia.

The Treatment of Chronic Intestinal Acebiasis

R. N. Chopra, B. Sen and G. Sen (*Indian Medical Gazette*, June 1935, page 324) report the use of Amibiarson—an arsenical preparation made by the Bengal Chemical and Pharmaceutical Works Ld. They treated 40 patients with the drug given by the mouth in capsule containing 0.25 gm. twice daily for ten to fifteen days. All these patients had E. histolytica in the stools in cystic form and they suffered from general rather than local intestinal symptoms. They had in addition to Amibiarson a saline purgative every morning and their diet was ordinary hospital diet. If there was any concomitant bacterial infection a course of auto-vaccine was also given. The criterion of cure applied to these patients was six consecutive negative stool examination after cessation of treatment. The results of their treatment are as follows:—

Cure in 63% and failure in 20% and indeterminate in the remainder.

Hæmorrhagic Purpura caused by Gold and Arsenic

E. H. Hudson (*Lancet*, July 1935, page 74) reports two cases of thrombocytopenic purpura caused by gold and arsenic. No definite reason for this condition was found—idiosyncrasy or abnormal susceptibility of the patient may be the cause. The eosinophilic response was less evident in these cases. No effective prophylactic measures are known but a history of allergic or other abnormal responses should

engender caution. Treatment is blood-transfusion and liver extract.

Injection of Tuberculosis Patients with their own Blood

O. Amrein (*Journal of State Medicine*, London, July, 1935, page 426) treated 50 tuberculous patients by auto-hæmotherapy. 2 c.c. of blood was injected intramuscularly into the gluteal muscles from every four to six weeks. His cases included tuberculous infection of the elbow joint, tuberculous otitis, exudative pleurisy, pneumothorax-effusion and pulmonary tuberculosis. All responded well to the treatment, e.g., fever decreased, appetite improved, sputum decreased and there was general improvement. Erythrocytic sedimentation test showed improvement in certain cases after one injection.

Alkalosis Arising in Treatment of Peptic Ulcer

W. Oakly (*Lancet*, July 27, 1935, page 187) believes that alkalosis often passes unrecognised and it is always necessary to remember that it may happen in any patient taking alkalis regularly even in moderate doses. The symptoms are numerous and varied—anorexia, headache, nausea, vomiting, irritability and changes in mentality, aching pains and twitching in muscles. In severe cases tetany, fits and coma may occur. The urine is increased in amount, alkaline in reaction, contains casts and R. B. C. and sometimes W. B. C. Treatment in all suspected cases—alkalis should be stopped and alkali-reserve and blood-urea be determined. If they are raised Ammonium Chloride (from 1 to 1.3 gm.) or Acid Sodium Phosphate (from 2 to 2.6 gm.) three times a day after food until alkali-reserve returns to normal.

Use of Thyroid as a Drug

J. H. Means (*Journal of American Medical Association*, July 6, 1935, cv. 24) sums up the use of the gland in different clinical conditions other than myxœdema and cretinism. He prefers Ext. thyroid siccum to other preparations. The drug is specially indicated in people with lower metabolic rate. Arthritis, Meniere's disease, recurring corneal ulcer, vasomotor rhinitis, constipation, neurasthenia associated with lower metabolic rate, sterility and habitual abortion in women, are all indications for the use of the drug. The drug is also useful in certain skin diseases characterised by dryness, e.g., senile eczema, ichthyiosis and scleroderma. It is also beneficial in nephrosis.

Reduction of Obesity

J. P. Zum. Busch (*Fortchr. d. Therapie*, No. 10, 1934) used Dinitrophenol by preference for anti-obesity treatment in doses of half to one mg. per kilo body weight without restriction of diet. Though the drug increases the metabolism without rise in pulse-rate and without reducing the blood pressure, the author has seen toxic effects when the drug is given in therapeutic doses, e.g., skin eruption, giddiness, headache, weakness, etc., and the drug also causes severe damage to the myocardium. The author advises to avoid using this anti-obesity remedy for the present.

PATHOLOGY AND BACTERIOLOGY

Histo-pathology of the Liver in ' Infantile Biliary Cirrhosis "

M. V. R. Rao (*Indian Journal of Medical Research*, 23:1935) summarises his observations on the histo-pathology of infantile biliary cirrhosis as follows:—

The morbid histological changes in the liver in five cases of the so-called ' infantile biliary cirrhosis,' commonly seen in Indian children, were critically studied by the application of different staining methods including the silver impregnation of the reticulum.

The following histopathological features of the disease are emphasized: (1) varying degrees of necrosis of the liver cells, almost uniformly distributed throughout the organ; (2) an avascular, non-inflammatory, œdematous connective tissue network enclosing in its meshes small-sized islands of hepatic parenchyma of very unequal sizes and in varying degree of degeneration; (3) an obliterative lesion of the terminal and some of the bigger divisions of the hepatic venous tree without appreciable changes in the portal venous and biliary trees; (4) areas showing disorganization of the reticulum of the sinusoidal capillary bed mostly around the hepatic venous terminals; and (5) poor attempts at regeneration of the hepatic parenchyma as evidenced by the small size of the rounded nodules of liver cells distributed

throughout the organ. In one case (Case V), inflammatory changes in the several divisions of the biliary tree (cholangitis with peri-cholangitic infiltration) form the presenting feature in the liver though, on closer study, the changes in the terminal and some of the bigger divisions of the hepatic venous tree and moderate pseudo-lobulation are also revealed.

The genesis of the fibrous tissue in the liver is traced to an atrophy and degeneration of the parenchymal mantle around the hepatic venous tree (due to an interference with the free flow of portal blood as a result of partial or complete obliteration of the lumen of the terminal and some of the bigger divisions of the hepatic venous tree from phlebosclerosis and endophlebitis or partial thrombosis) and collapse, condensation and sclerosis (collagenous transformation) of the reticular frame-work of the corresponding sinusoidal capillary bed. It is shown that the pathological changes in the liver in the present series of cases are very similar to those described in toxic cirrhosis. But, on account of the fine pseudo-lobulation and the co-existence of the necrotic lesions with regenerative changes in the hepatic parenchyma, it is suggested that the ætiological noxa is probably of a sub-acute nature. Whatever might be the exact nature of the toxin responsible primarily for the lesions of the hepatic vein and secondarily to the parenchymal loss, its action is not acute, but probably sub-acute and persistent, resulting in a retardation of regeneration and continuous necrosis of the hepatic parenchyma. The exact nature of the toxin responsible for the sub-acute atrophy and necrosis of the hepatic parenchyma and the resulting cirrhosis (residual fibrosis) can only be determined by a further clinical investigation in the light of the present findings. The morbid condition in the liver is shown to be one of ' sub-acute toxic cirrhosis ' in the first four cases and ' cirrhosis mixtes '—sub-acute toxic cirrhosis with cholangitis—in the fifth case.

The genesis and function of the so-called bile ducts (pseudo-bile canaliculi) seen in the connective tissue network, the mechanism of ascitis and the production of icteric necrosis and bile thrombi, in the present series of cases, are briefly discussed.

It is suggested that an intensive study of the liver in the pre-cirrhotic stage of this disease and a knowledge of the exact mechanism of the production of the early changes in toxic cirrhosis would throw further light on the ætiology and pathogenesis of the cirrhosis seen in the present type of cases in Indian children.

Conclusion. The morbid condition of the liver in the disease commonly described as ' infantile biliary cirrhosis ' in Indian children, is one of ' sub-acute toxic cirrhosis,' manifesting biliary inflammatory lesions only in rare instances.

(*Author's summary*).

Differentiation of Active and Inactive Tuberculosis

H. Decker (*Beitrage zur Klinik der Tuberkulose*, Berlin, June 25, 1935, p. 291) investigated on the differential blood count of tuberculous patients following the Pirquet reaction. He analysed 50 cases which demonstrated active tuberculosis, 18 cases who had had tuberculosis but in whom clinical examination now gave no indication of the activity of the process and 50 non-tuberculous cases. He injected 1 mg. of old tuberculin and examined the leucocytes shortly before and 24 and 48 hours after the injection, 500 leucocytes being counted in each cell-count. He found out that in all active tuberculous cases there was an increase of the staff-cells and the lymphocytes decreased in the majority of the cases; the 50 non-tuberculous cases showed no change in the staff-cells. The 18 persons who got well had no change in the staff-cells and the number of lymphocytes remained unaltered in 14 and increased in 4. Thus if a person with a normal blood-picture or with one that has shifted to the left and for which no other explanation can be found, reacts to an intercutaneous injection of one XX mg. of old tuberculin with an increase in staff-cells, it is an indication of the presence of active tuberculosis. A decrease in the lymphocytes probably has the same significance.

PEDIATRICS

Treatment of Hookworm-Anæmia with Massive Dose of Iron

J. C. Banerjea (*Indian Journal of Pediatrics*, October 1935, p. 314) reports a case of severe anæmia in a boy of 12 heavily infested with hookworm but recovering wonderfully by exclusive use of iron in massive doses for a period of 4 months, the ankylostoma ova persisting in the stool all through the illness. The blood condition of the patient on admission under his care was as follows:—Hb—10%

(Talquist scale); R.B.C.—1,020,000 per cmm., W.B.C.—8,000 per cmm.; Polymorph—72%, Lymphocytes—24%, Eosino—2% Hyaline—2%; M. P.—Nil; The size of R.B.C. as estimated by Eveshalometer was 6.8 μ. The blood report after 75 days became Hb—82%; R. B. C.—5,840,000; and Eosinophiles rose to 42%. Stool examination revealed hookworm ova in abundance. The patient was given ferri et ammon citras gr. xv thrice daily for a period of two months and then it was increased to gr. xx thrice daily. This case proves the view that an interference with the assimilation of iron probably plays a greater role in hookworm anæmia than intoxication or blood-loss.

Celiac Disease Treated with Insulin and Dextrose

B. Schlesinger and K. D. Keele (*Archives of Disease of Childhood*, London, June, 1935) report a clinically typical case of severe celiac disease with rickets and symmetric fractures. In spite of being on low fat diet, ultra-violet ray, calcium and Viosterol he had a loss of weight of 3 pounds 12 ounces in 8 weeks. As soon as Insulin and dextrose therapy (3 units of Insulin and 1.5 gm. of dextrose twice daily) was begun improvement followed with a gain in weight of 4 pounds and 12 ounces in 7 weeks. There was also a general improvement. The stools became less frequent, firmer, and no longer offensive, the total fat content being normal. Blood phosphorus rose to 6.4 mg. per 100 c.c.

Asphyxia Neonatorum

Dr. J. Giebels (*Ztrlbl. f. Gyn.*, No. 29, 1934) treated 19 children suffering from " Blue asphyxia " with 1 c.c. of coramine injected intramuscularly with 100% cure in 3 to 4 minutes. He also treated 6 cases of " White Asphyxia " with similar treatment 5 of which recovered. Other therapeutic measures, e.g., catheterisation of trachea, stimulation of skin, alternating hot and cold baths were not omitted. Coramine is also effective in asphyxia due to narcotics in adults and as a preventive of post-operative pneumonia if it is prophylactically used after an operation under general anæsthesia.

Mercurochrome in Midwifery

H. W. Mayes (*American Journal of Obstetrics and Gynæcology*, July, 1935, XXX, 80) basing on observation of 6,000 cases reports very favourably on the use of mercurochrome to secure vaginal antisepsis during labour. As soon as a patient gets admission 3 drachms of a 4% watery solution is instilled into the vagina with a special syringe and the process is repeated every 12 hours during labour. No injurious reactions or ill-effects upon the mother or child have been observed and the only disadvantage is its staining quality.

Irregular Genital Bleeding during Menopause

F. E. Keene (*Pennsylvania Medical Journal*, Harrisburg, page 774) made an analysis of lesions responsible for bleeding in 2,000 women over 40 years of age. He found that lesions producing bleeding from the genital tract prior to or during menopause are benign in 5/6th of the cases and after menopause 2/3rds of the lesions are malignant. Of the premenopausal benign lesions the body of the uterus forms two-thirds, tubes and ovaries one-fourth and cervix and vagina the remainder. Of the post-menopausal benign lesions half are formed by cervix, vagina comes second in order and the percentage of the body of the uterus drops to less than 17%. Malignant lesions are primarily cervical, in more than three-fourths of the patients. Of the premenopausal malignant lesions cervix forms more than three-fourths of the cases, body of the uterus 17% and adnexa, vagina and vulva form less than 10%. Of the post-menopausal malignant lesions cervix forms the majority, body of the uterus about 40% and adnexa, vagina and vulva 7%. Prior to menopause benign lesions that cause bleeding are of neo-plastic or functional nature in more than 90% of the patients; after menopause the majority of the benign lesions are due directly or indirectly to the physiologic atrophy of the genital organs incident to cessation of ovarian function.

RAPID INCREASE IN INDIA'S POPULATION

In 1933 there was roughly an increase of 3,582,089 in the population of British India, giving a rate of 13.1 *per mille*, according to the latest report of the Public Health Commissioner with the Government of India.

" It is clear," states the report, " that there has been no violent disturbance in the Indian vital statistical world. The birth rate, though somewhat higher than in the two previous years, has merely returned to the average level recorded during the 33 years of the present century and the slight reductions recorded during 1931 and 1932 seem to have been merely fortuitous in character and cannot be taken to indicate that there is any tendency for the Indian peoples to follow the example of Western nations in respect of restriction of families. The death rate is slightly higher than that recorded in 1932 but does not show any great departure from the downward trend which has characterized the general death rate since the great influenza epidemic of 1918-19.

Child Mortality

" Unfortunately, the same cannot be said of the infantile death rate. In the 1931 report attention was drawn to the downward trend in this rate following the disastrous years of 1918 and 1919 but the recorded rates of the past six years seem to indicate that that trend has disappeared. Since 1928, in fact, the annual figures for infant mortality have fluctuated only slightly between 181 per 1,000 births in 1930 and 169 in 1932 and the figure for 1933 again lies between these two contiguous limits. It seems that, for the present, the factors influencing infantile mortality are comparatively stable and that new and more vigorous preventive measures will have to be planned and put into execution before a further saving of infant life can be expected. No public health officer can look with any degree of equanimity of an annual death roll of nearly 1¾ million infants below one year of age and if, as has been repeatedly stated, the infant mortality rates of a nation provide an accurate estimate of its sanitary conditions, then India has little cause for satisfaction as regards the state of its public health.

" The further deduction may be made that existing campaigns in the fields of child welfare and maternity relief have had so far little or no widespread influence, although no doubt in the restricted areas in which they are carried on a considerable effect may have been produced. As a matter of fact the small degree to which this form of preventive work has so far developed makes it evident that the merest fringe of the problem has been touched and it could not possibly have produced effects sufficiently profound to have influenced the infantile death rates common to the general population of rural India. In any case, these facts and figures indicate the enormous problems awaiting attack and make clear the extent of the health work facing the new provincial and central Governments which will shortly come into being under the reformed constitution.

Deaths from Epidemics

" The three main epidemic diseases, cholera, plague and smallpox, together caused 214,590 deaths but although this number is somewhat higher than in the previous year, owing to an increased prevalence of smallpox, the combined death rate was only 0.9 per thousand. Cholera was for another year only a minor problem and, although it is dangerous to be optimistic, it seems unlikely that India will in the future suffer from the devastating pandemics which were a feature of the later years of the 19th century. Plague once more shows a reduced incidence and although the total deaths numbered nearly 43,000, in this case also, the disease appears to be gradually dying out. Smallpox deaths increased in a disconcerting manner from 45,000 in 1932 to 103,000 in the year under review and the epidemic was fairly widespread over the whole of the Indian Peninsula. The present exacerbation after a series of years of comparative freedom from epidemic smallpox indicates how far India still has to go before this disease is satisfactorily controlled.

" Of the 3½ million deaths registered as due of ' fevers,' probably a large proportion were actually caused by malaria. It is also a fair assumption that numbers of malaria deaths were recorded under 'other causes.' Remembering also that 12½ million diagnos-

ed cases of malaria attended at hospitals and dispensaries, it may be fairly estimated that during 1933 malaria exacted a toll of at least 1,000,000 lives. This terrible mortality is apt to be lost sight of owing to the defective and misleading nature of statistical records and because of the less dramatic nature of the disease as compared with cholera, plague and small-pox, except when a violent epidemic occurs such as that of 1908 in the Punjab. But year after year in India, malaria is probably responsible for about 20 per cent. of the total recorded deaths and many millions of the population experience periods of sickness which cause grave loss of earning power and much economic distress. The problems associated with the prevention of malaria in this vast sub-continent are such as might well daunt the most courageous, for the poverty of the people and the lack of resources among Local Boards and Municipalities prohibit all expensive measures. During recent years a number of local Governments have made successful attempts in certain particularly malarious areas to provide the stricken populations with free supplies of quinine and, even although here also lack of funds has restricted effort, a considerable degree of betterment has been achieved."

" Under present circumstances, probably more benefit can be conferred by the distribution of quinine than by other anti-malarial measures and it is to be hoped that the Government of India will be able to accept the suggestion that its reserve stocks of quinine should be gifted to the provinces in order that, even temporarily, more adequate supplies of the drug may reach the people. It is an unfortunate fact that India cannot herself produce anything like the amount of quinine her population requires and that present prices make it largely a prohibitive luxury to most of her people. Nevertheless, it is urgently important that larger quantities should be made available, for it is difficult to suggest other means of succour to the millions who suffer from this deadly disease.

Population Problem

" It seems once more necessary," states the report, " to invite attention to the increasing gravity of the problems associated with the continued growth of the population which still proceeds apace. During 1933, the population of British India increased by over 3½ millions, and the estimated population at the mid-year period was nearly 273 millions. There is no reason to think that in the Indian States the same increase has not occurred, for these States are in such intimate relationship with different parts of British India, that any factor tending to reduce numbers in one would exert a similar force in the other.

" This means that since the end of February 1931, nearly 18 millions have been added to the population of India and on a conservative estimate, the total must now be approximately 370 millions. This estimate is almost certainly conservative because, for the purposes of these calculations, the rate of increase has been taken as that recorded during the decade 1921—31. This rate has however been considerably exceeded each year since the census of 1931 so that it would not be unduly stressing the case to add another 2 millions to the grand total. Even with this omission, however, the problem is large enough and if existing conditions continue—and at the moment of writing no indication of change is evident—there seems little doubt that by 1941, when the next census is taken, the population of India will considerably exceed the estimate of 400 millions given in last year's report. The population problem in India is therefore a real one and because scepticism still exists in the minds of certain authorities who continue to ignore facts, that problem demands further examination from an angle which, so far as I am aware, has not yet been given sufficient attention.

Destruction of Land

" The total land in British India amounts to 667 million acres but of this total only 232 million acres were cultivated and sown, 47 millions lying fallow, 154 millions being culturable but uncultivated, 145 millions being not available and 89 million acres consisting of forests. Even making the ridiculous assumption that the whole 667 million acres of land were available, this works out at only 2,44 acres per head of the population. A more reasonable assumption would be to take the acreage made up of cultivated and sown, fallow, and culturable but uncultivated. These three items total 481 million acres which gives only 1.75 acres per head of the population. But some land must be allowed to lie fallow, an additional proportion must be given over to the cultivation of crops other than food and during 1933-34 the total acreage under food crops amounted to only 206½ million acres. This gives only 0.72

acres per head of the population in British India and it does not require more than an elementary knowledge of agriculture to realize that it is impossible to provide a sufficiency of food for the present population of India from an acreage of this dimension. It may even be held that, were all available cultivable land given over to food production alone, the supply would fall short of reasonable and adequate demand.

Food Shortage

"In order to forestall the usual agrument, it can be admitted that the present shortage *might* be met for a short period of years by more intensive methods of cultivation, but that implies the immediate adoption of these intensive methods all over India and to those of us who know the village *ryot*, it is difficult to envisage a solution of the problem along those lines. Even supposing that additional food supplies were made available in this way, however, the difficulties would only be postponed for a few years, because the increased numbers of the population would rapidly absorb the surplus. Apparently, therefore, the problem of numbers in India is even more acute than before and it is one of such importance to the welfare of this country that it deserves immediate examination. Numbers are so intimately bound up with economics that the problem is one which affects every dapartment of Government and every class of citizen. It is a question which will shortly force itself upon the attention of every man and woman in this country: it is to be hoped that it will receive adequate notice before disaster befalls."

DISPENSARIES IN ASSAM

Following is the Triennial Report on the working of the dispensaries in Assam for the years 1932, 1933 and 1934.

During the triennium the number of hospitals and dispensaries of all classes in the province rose from 254 to 260. The increase is due to the opening of one private aided dispensary at Hazipur in Sylhet and six local fund dispensaries at Khetri, Tambulpur and Kamarkuchi in Kamrup, Bamo in Sylhet, Dharamtul in Nowgong and Ahatguri in Sibsagar, with the closing of one Railway dispensary at Juria in Nowgong. This moderate increase and the higher incidence of malaria were responsible for a rise in the total of indoor and outdoor patients treated at medical institutions from 58,74,482 in the previous triennium to 66,68,799, i.e., by 14 per cent. The combined daily average attendance increased from 81,03,46 to 98,49,39, i.e., by about 21.5 per cent.

Straitened resources continued to handicap progress, but the enthusiasm of successive Inspectors-General and of several Civil Surgeons, particularly Lieut.-Colonels Sen and Allen and Dr. Sikdar, enabled very real improvement to be effected in the general efficiency of hospital administration and equipment, as also in the training of medical students and doctors in employ. The Sylhet Sadar Hospital was provincialised and temporarily housed in the vacant buildings of the Medical School. At Karimganj a new outdoor dispensary was constructed with a grant of Rs. 17,500 from Government. The Gauhati Local Board has been particularly active in the effort to extend medical facilities. A new and up-to-date operating theatre was built at Dhubri. The Sema Nagas, by collecting Rs. 2,000 and offering free services in the carriage of materials succeeded in establishing their case for a dispensary in the unserved Sema country despite the financial difficulties of the province, and an institution has since been opened at Ghukiya. The Nagas stand preeminent in Assam as regards the number of self-dieted patients. Several minor improvements were carried at Dibrugarh, including the construction of a new Police ward, which set free the old building as a hostel for students of the Medical School.

The Department's efforts to raise the standard of local institutions were happily seconded by private

philanthropy, which produced more than a lakh and a half of rupees for medical and health projects during this period. The results of such benefactions include a self-contained female section at Golaghat, dispensary buildings at Doom Dooma and Bamoi, and a new administrative block and outdoor dispensary at Sibsagar. To the names of Rai Bahadurs Bhuban Ram Das and Siva Prasad Barua and Khan Sahib Shamsuddin Khan, from whose donations projects at Gauhati, Nowgong and Haflong were completed during the triennium, must be added those of Babu Paresh Nath Chaudury, Mr. R. A. Wood, Babu Gajanan Agarwala, Rai Bahadur Joharmal Agarwala, Babu Rameswar Saharia, Rai Shib Balabux Hansaria, Srijut A. Chaudhury, Babu S. Agarwala and Babu S. K. Das for generous donations, and Dr. D. P. Williams for whole-hearted efforts to finance improvements at Doom Dooma, which deserve honourable mention. Projects which remain to be carried out with the aid of public philanthropy are a maternity and gynæcological block at Dibrugarh, a child-welfare centre at Nowgong, a separate female hospital block at Karimganj new paying wards for male and female patients at Dibrugarh and a maternity ward at Imphal. Babu Surajmal Jalan, M.B.E., has given Rs. 13,000 for the first named, and Rai Sahib Balabux Hansaria Rs. 6,000 for the second. The most important project carried out during the period under review is, however, the construction, as the result of a Red Cross appeal, of the hospital for women and children in Shillong, which is now nearing completion and which will function very shortly as a Dufferin hospital. This project will have cost a little over Rs. 1,55,000 in non-recurring expenditure, of which nearly Rs. 60,000 have been contributed by public philanthropy. The principal donors were Rai Bahadur Jiban Ram Goenka of Shillong who contributed Rs. 25,000, the tea interests in London and Calcutta, which under the lead of Sir Charles McLeod subscribed over Rs. 16,00, an anonymous donor Rs. 10,000 and His Highness the Maharaja of Mayurbhanj, who contributed Rs. 5,000. Mr. B. N. Rau, I.C.S., as Honorary Secretary of the Provincial Red Cross organization, actually initiated the project, and his successors, Messrs. Devi Doyal, H. P. Barua, R. L. Varma and Ali Ahmed, have, in conjunction with the Building Committee of the Red Cross, worked hard to carry out the project. His Excellency and his Minister take this opportunity to thank them all for their unremitting zeal in the work. The loan of the free services of an officer belonging to the Women's Medical Service by the authorities of the Countess of Dufferin's Fund has made the efficient management of the institution practicable.

In the Resolution on the last Triennial Review it was mentioned that Government had under consideration the issue of rules to govern the fees charged in their medical institutions and those of local bodies. The matter was postponed on account of the financial depression, during which it was desirable to avoid action which might impose a fresh burden on any class . A draft of such rules as are urgently necessary to bring hospital services under regulation is now again under consideration, but has proved to be a matter of some complication.

The efforts made by Colonel J. P. Cameron while in charge of the Department to provide Assam Hospitals with a satisfactory nursing system have fruit. The entertainment of nurses at Gauhati. Dibrugarh, Nowgong and Silchar has made the hospitals more attractive, and the wards are fully occupied. Six young women are undergoing training at Calcutta and Delhi for future vacancies. A comprehensive scheme of nursing has been worked out in connection with the new hospital for women and children at Shillong, and proposals for providing nursing sisters at Sylhet and Jorhat are under consideration. Another innovation for which Colonel Cameron was responsible was the institution of refresher courses for Local Board doctors and selected Government Sub-Assistant Surgeons to enable them to keep their professional work up-to-date: they are held twice a year at Dibrugarh, Gauhati and Sylhet, and appear to be gaining in prestige.

One of the most difficult problems facing the medical profession in Assam is Leprosy. The therapeutics of the disease, while they no longer give cause for despair in any patient, and those in the earlier stages have an excellent prospect of rapid arrest in their malady, have still not reached a stage at which large numbers can be readily dealt with, as in Kala-Azar or other communicable diseases. In particular both adequate indoor accommodation for early cases and colonies for the large fraternity of pauper lepers are lacking, and the removal of this want presents a financial problem for which present means cannot suffice. The measure of difficulty can be gauged from the fact that 200 new patients were admitted at Tura in 1933, and no less than 162 discharged not cured in the same year. A Leper Colony for twenty patients was opened at Gauhati by the Gauhati Muni-

cipal Board, and another at Jorhat for about fifty by Dr. Kirby of the American Baptist Mission, with help from Government and the Assam Leprosy Relief Committee. Treatment sheds were also attached to various civil hospitals and local fund dispensaries from grants made by the Committee; that body also made substantial grants for medicine and equipment in the Public Health Department dispensaries. A call has been directed to the Mission to Lepers, in the hope that the campaign which has now been in force for some years may be strengthened to a degree more commensurate with the need.

The extension of the Indian Red Cross Society's activities, for which Colonel Cameron was again largely responsible, is perhaps the most remarkable feature of the period under review. The progression from a single provincial branch with 20 members to an organization which covers the province and has now over 700 members is fully described in the Report; and the effect upon medical work all over Assam is too well-known to need further description.

The Provincial Malaria Committee and Assam Medical Research Society continued to do most useful work, and the interest of local and municipal boards in malarial work has been much stimulated. Several are setting aside lump sums for anti-malarial schemes. Malaria Surveys were carried out in 28 different areas in the province by the Society, and valuable increases in knowledge have been obtained. A marked reduction in the total of malaria cases treated in 1934 may be partly attributed to the measures undertaken.

Consciousness of the presence of Tuberculosis in urban communities has awakened considerable public anxiety about this disease in Assam as elsewhere in India. There were 4,433 cases of tuberculosis of the lungs treated during the period under review against 4,010 in the previous triennium. Special lectures, demonstrations and propaganda work on the subject are being undertaken under the supervision of a special committee of the Red Cross, with the help of the King George Thanksgiving Fund and money provided by the Public Health Department. The questions of a tuberculosis sanatorium in the province for early and curable cases and of means to make knowledge as to the mode of dissemination of this disease more widely spread have been engaging the attention of Government. Lack of funds stands in the way of an attempt to solve the first problem. The solution of the second is rendered difficult by the wide-spread ignorance of the ordinary laws of health even amongst the residents of urban areas. It is hoped that the propaganda work undertaken will bear some fruit and this is by far the best and the most hopeful method of combating the menace.—*Patrika.*

ASSOCIATION NOTES

THE SECOND U. P. MEDICAL CONFERENCE

The Second United Provinces Medical Conference opened at Cawnpore at 12 noon on the 12th October, 1935, in the hall of the Cawnpore Medical Association at Parade.

First Day's Proceedings

Dr. S. N. Sen, the chairman of the reception committee, delivered the following speech, in welcoming the Conference to Cawnpore:—

Major Ranjit Singh and sister and brother delegates,—On behalf of the reception committee, I most heartily welcome you all to our town, which, according to the great Dr. Mahendralal Sarkar, the founder of the Science Association of Calcutta, enjoyed the reputation as a sanatorium in the past, till the advent of the Lower Ganges Canal in the year 1857, after which the climate has deteriorated. It was a growing town, but during the last decade, it has grown very rapidly, and thanks to the Improvement Trust, which has done and is doing a yeoman's service in helping to remove the ever-increasing congestion of the town. Cawnpore beats all other towns in the province in infant mortality. Here T. B. is on the increase. It is a commercial town and is aptly called the Manchester of India, but it is proud of having the very old manufacturing chemical firm of Dr. Waldie, who discovered first in India independently the anæsthetic property of chloroform. While he was going to send his thesis to England, he received the news of Dr. Simpson's discovery of the same anæsthetic. He tore up his thesis and made an offering of it to the fire-god, being true to the soil on which he toiled and lived. Laterly, Cawnpore had another chemical manufacturing firm—Messrs. Mathur and Manzoor, which is doing good work. Cawnpore is also famous from the Hindu religious point of view. It is within the Brahmavart Zone. This zone is the seat of the great sacrificial ceremony performed by Brahma, about ten miles from this place, up to the river Ganges. Here was the Ashram of the hoary-headed Valmiki Rishi, where the renowned Sita Devi gave birth to her twin children, who became great warriors. Near this Ashram is a mound, on which once stood the fort of Dhruva, the faithful. So, Cawnpore stands on a soil which is renowned for religious and commercial and historical fame. To such a town I welcome you all most cordially.

I thank you all for your taking the trouble of coming here to attend the second session of the U. P. Medical Conference, at the sacrifice of your valuable time and money. Indeed, it is so gratifying to see that you all have so much interest for the good of our profession. It fills my heart with joy and hope. But we must thank the Almighty God first, whose mercy has awakened our leaders to their duty, by inspiring them with the idea that the time has come, when we should be united or we shall be nowhere. 'United we stand and divided we fall,' goes the adage. Being inspired with this ideal, our revered Col. Bholanath at this age and at great sacrifice, had made a tour over many distant places in India. He had been exhorting and entreating us to drown our personal differences and petty jealousies and to organize ourselves into a solid body. He asked every one of the profession to join the Indian Medical Association. He made many valuable suggestions for our organisation, which we must ponder on and try to accept and follow. May he be spared for many a year to come to serve the cause of our profession!

Thanks to our Meerut valiant brothers for taking up the initiative in fighting against the Poison Act. But, we must remember that in our zeal to wrestle out our rights from the Government, we must not forget that we have also a sacred duty of co-ordinating with it and other bodies for stopping quackery and of suggesting practical schemes for the benefit of the public. By doing this, we shall be able to show to the world in a better way that we are worthy to have our rights.

We have been accustomed to see that hospitals are always and everywhere established by the Government, as if it is their monopoly. A quarter of a century ago, when the Service Home where poor people picked up from the streets were treated, was established here in Patkapur by a few laymen, we were its visiting doctors. The munsarim of the Judge's Court once came to visit it and was pleased

to see it, but he warned us in all seriousness that the Government would come upon us one day. The civil surgeon was consulted on this point. He assured us that the Government would be too glad if we started hospitals of our own. To maintain hospitals is not the work of the Government; it is the people's. So the queer ideas of old have changed with the times. People now like to have their own hospitals which will not only benefit the public, but our profession will also be highly benefited by getting a greater scope to work and learn. Very big towns in India have got hospitals conducted and manned by medical practitioners and maintained by public charity. We urge, therefore, that efforts should be made without delay in every town where there is a medical association to start a hospital with howsoever modest a beginning. We should not wait for planning for a big building without paying heed to what would suit the conditions, manners and customs of the people, for whom these hospitals will be founded. I strongly hope this Conference will take this matter up in right earnest. Allahabad, we are glad to learn, started a hospital of its own. We are glad to inform you that we have got a scheme for hospitals which is at present in the melting pot. A member of our association was to open a Nursing Home here very soon. Our lady member, Dr. Mrs. Kemble, who has just passed away, dedicated all her life-earning for establishing a Maternity Hospital. May God fulfil her long-cherished desire soon, which could not unfortunately be fulfilled in her life-time. In this connection, I would also urge the Conference to try to establish schools for the training of nurses and *dais*, in various places. We all know how our widows dedicated themselves in the service of their relations, in the family, rich and poor alike. Service to their families is their watch-word and they totally annihilate their selves, and yet in the majority of homes, it breaks one's heart to see how these personifications of self-sacrifice are ill-treated. There are many educated and half-educated amongst these widows. If there be schools for training them in nursing, they would remove a great want in our hospitals.

Our association must also take part in rural uplift by supplying or helping to supply medical aid to rural areas, according to the scheme so ably put by Dr. Naidu in his presidential address at the Lucknow Conference, and, secondly, by carrying on anti-malarial campaigns and other similar work. Dr. Naidu's scheme is worth trying. All this work can be done only when we are united into an organized body, but our selfishness and want of discipline stand in the way of its attainment. The only remedy, I think, is to remember and act according to the golden rule 'Do unto others as you would wish others to do unto you.' This alone can make the path of our unification possible and easier. Is it not very strange that during the Wars of the Roses, the feelings of the people in England were running very high? There was peace reigning within the four walls of their Medical Association. This anecdote inspires hope in us, who are living in a time of peace. Let us pray to the Almighty to help us in the attainment of our goal and let the words of the great Swami Vivekanand always ring in our ears ' Awake, arise, or be for ever fallen.'

Major D. R. Ranjit Singh then delivered the following presidential address:—

Brother Delegates, Ladies and Gentlemen,—Believe me I am not entering into a common place in thanking you but do so most heartily at the great honour you have done me in electing me your President. It has been said that the greatest honour that India as a whole can offer to its citizen is to elect him to the presidential chair of the Indian National Congress and the greatest honour that a province can offer is to elect him as President of the Provincial Congress. In our profession I think I can safely take the same simile and say that the greatest honour of the medical profession of our vast country is to elect one to the All-India Medical Council and the greatest honour that a province can offer is to elect one as President of the Provincial Medical Council. It has been in my lot to have presided over several institutions, some of which I can say were most important from the point of view of nation-building, education and others, but I confess to you that never in my life have I felt more honoured than at the present occasion when you all have unanimously elected me to the chair this evening. When I first got the information through my very old and esteemed friend, Dr. Bhopal Singh, our energetic Secretary, I was really amazed, as although my conscience is easy about my having done my bit in taking part in civic and other public activities of my country, I hardly thought I have done anything very conspicuous in our own profession. The fact which strikes me as possibly having guided you to elect me happens to be that I am perhaps the second oldest private medical practitioner in the province to-day.

By this I mean that I am the second seniormost of my brethren who have not entered any paid medical service and who having started private practice from the very first day are still at it. Nobody present here is more conscious of the enormous responsibility that rests on the president of such a body, specially in these days when our profession is in the great danger of being encroached upon not only by an army of quacks but by various other systems, most of whom I am not prepared to criticize adversely. And according to the old maxim of preserving our own order first I must take the cudgels of the modern system of the medical profession as it is practised to-day. I have purposely avoided to call it western as we find that the greater part of the civilized world is practising the system to which we have given our allegiance. It is well known to most of you that it is not only in the West that great researches have been made but there are brethren in the far East also who are carrying on the campaign of research and practising the same system as is practised to-day in the whole of Europe, America, Australia and throughout at least the urban area of British India. I may just mention the name of Prof. Kitasato of Japan who is the first discoverer of plague bacillus and Ehrlich and Hata, the German and Japanese workers respectively, who were the inventors of Salvarsan, our great sheet anchor against syphilis, and who, I am sure, are well-known to you. Going centuries back we all know that the principle of vaccination from cow-pox was really started and was known to India long before the West claimed its discovery.

Coming to organo-therapy, which is acknowledged as the scientific branch of our treatment, and which has its basis on Koch's postulates as against the rest, which is after all said and done, more or less empirical, we Indians can point out with great pride, indeed, that our ancestors knew and used it extensively. Having been fortunately a student of the Unani system of medicine and having studied the original text-books in Arabic I know it personally that organo-therapy was also extensively practised and is practised to-day by the Unani physicians although in a more or less modified and crude form as compared with the modern system. The task before us is not to sit and to harp the tune of our ancestry but to take a practical view of things confronting us as they affect our profession and in order to save time I would divide them under a few headings:—

Present Medical Profession and Existing Indigenous System

If we trace the history of the modern medical system of practice we will have to go back to the days of the East India Company who as a matter of Hobson's choice had to import their doctors to look after their men and their employees, as being foreigners and new to the country they were very sceptic about the indigenous systems and here I may mention that the first stone of the great British Indian Empire was laid by Sir Thomas Munro, a western doctor who, having treated the then emperor of India, was allowed the concession of trade. Gradually, as the influence of the British increased, they had naturally to introduce the system on a much wider scale and to-day we see a multiplicity of medical schools and colleges all over India, most of which I am proud to say, are second to none in any other civilized country and whose products are now swarming and doing very substantial and useful work in the distant corners and parts of our country; but I am sorry to remark that in common with the rest of the country and other professions our brethren are also unfortunately in the grip of the great unemployment problem. Besides the question of general unemployment, we have to take into account the competition that our young men have to face not only against an army of quacks but also against the old and indigenous systems. To these we have to add the increasingly large number of fadists, who without ever having studied the vast subject of medicine, pose as naturopaths, osteopaths, masseurs and many other *paths*. As regards the indigenous systems, I do not belong to the school which calls them unscientific. About this there has already been sufficient controversy and there have appeared from time to time articles and letters supported by authorities, which have proved beyond doubt that it is a mistake to call our indigenous systems as unscientific, while I admit that owing to want of state aid, apathy and callousness, I should say discouragement, these sister professions have suffered a very great set-back, and to me it is, indeed, a wonder how they have even to-day maintained their own status so far as our masses are concerned. Talking of these provinces I acknowledge with warm thanks the interest taken by my esteemed friend Rai Rajeshwar Bali, ex-Minister of these provinces, who was the prime mover of the idea of making an effort to bring these systems to a more up-to-date standard and

obtain for them some Government aid also. Space and time at my command do not allow me to discuss the details and the method of the utilisation of the Government grants and the organization, badly needed by our sister systems of treatment. In my humble opinion the time has arrived when instead of giving these systems a kick we should extend our hand of fellowship and impress upon the Government the great need that exists of organizing, modernizing and improving these systems, a good beginning in which direction has already been made by the great Unani College started by my late lamented, esteemed friend Hakim Ajmal Khan of Delhi. I hope, we are aware of the fact that in other civilized countries such as America and Germany they have recognized Homœopathy, and there are to-day most up-to-date teaching institutions or at least special chairs allotted to this subject along with the orthodox style or so-called Allopathy. It is no use talking from a high platform and running the indigenous systems down by calling them all sorts of names when we know it for a fact that the bulk of the masses of our brethren are still protected and treated by those systems which owing to various causes are the only ones available, poverty, want of communication, etc., being amongst the most glaring causes. I believe that there is room for all the creatures of God on His earth and if we would only be a little more charitable and godly and believe in the good old saying of live and let live and organize and modernize our parental systems on proper lines, they would still be the sheet anchor in saving our large and teeming population of millions. In this connection it is worth while to note that while the State has not been miserly in providing the modern system of medical education they have failed in their duty to see that our country becomes independent of the foreign supply of medicines. Indeed, it is an irony of fate that India, the nursery of medicinal herbs and plants, should export them to foreign countries, depriving the children of the soil of what is their due through birthright. The older ones amongst you will remember the great difficulty we had to face during the last Great War when we found that products other than English were not available. Important committees, like the one presided over by my very old and esteemed friend, Col. Chopra, have left nothing so far as laying great stress on the fact is concerned, but the time has now arrived when we, who are brought up on the modern Allopathic system, should put our force to achieving this object. I may at this point refer to the *Indian Medical Plants*, a book worth gold, which was brought out by my very old and dearly beloved colleague Major B. D. Basu, I.M.S., and Col. Kirtikar. A flood of light is thrown by the book on the richness of our land in medicinal herbs and yet we find that even the Extract Baele liquid has to be imported from England, while the plant grows abundantly throughout our countryside and its fresh extract is so largely used even by our old women most efficaciously for some of the prevailing maladies, such as dysentery and other intestinal troubles. Are we not literally and actually flooded every day of our life with foreign propaganda, advertising foreign proprietary products, which are bleeding our country white and causing such a serious drain on our already dwindling national wealth. In this connection may I be pardoned to say that it is almost becoming a fashion with our brethren to prescribe the latest foreign proprietary products, many of which we soon discover are useless. I would just draw your serious attention to the psychological causes that have stood so far against the Indian medicinal herbs which have been proved efficacious beyond all doubt by acknowledged authorities. To cut a long story short, I would only mention that the chief reason is because it will go against the vested interests.

A valuable enterprise in this direction has luckily been made by our brethren in Bengal and I take this opportunity of sending my greetings on your behalf to the Bengal Chemical Works and the Bengal Immunity Works who have now relieved us of the obligation of having to fall back on foreign supply only. This, however, is a drop in the ocean. What is required is that every province should have a well-organized institution run more or less on the lines of the Bengal Chemical Works and the Bengal Immunity Works. These will also provide for many unemployed medical graduates and chemists and before I close this I would mention the great impediment that exists owing to the restriction in the manufacture of alcohol. Imagine the enormous difference in the price of alcohol that could be made by allowing the molasses of the myriads of sugar factories to be utilized for the manufacture of alcohol.

Medical Education

The next big question that I would like to place before you is the great question of medical education in the province. We have at present two main teaching institutions: (1) The King George's Medical

College at Lucknow and (2) the Medical School at Agra, the former turning out M.B.B.S. and the latter L.M.F.S. Having been a member of the State Board of Medical Examinations from its inception until the time it merged into the State Medical Faculty, to which I had not the honour to be elected not because I did not carry the confidence of the independent medical profession but because the Government ruled that even the representative of the private medical profession had to fall back on the votes of men of the Provincial Medical Service. I know the great heartburning that exists amongst brethren of the Agra Medical School about the invidious distinction that exists in their after-lives, the most glaring one of which is their not being recognized eligible for registration by the British Medical Council, and to crown all these your brethren have been altogether ignored by the new Indian Medical Council which fact is well known to us all and for which I have all sympathy with those brethren. In my humble opinion the time has long arrived when there should have been one minimum qualification for registration by the British Medical Council as well as the Indian Medical Council. We are all aware of the difference which exists between the graduates of one of the medical schools of England and a licentiate or diploma-holder of the Joint Board of the Royal College of Physicians and Surgeons, yet it is a well-known fact that both are entitled to compete for the highest service under the State, while in our country our brethren are deprived of such privileges. Having deep convictions in the efficiency of our system and realizing the general inability of the State to provide sufficient medical aid to the teeming millions of the land, I deplore any delay that is being allowed in raising the standard of the Medical School of Agra which has been recommended strongly for many long years and brought to the notice of the Government through the efforts of the All-India Licentiates Association, and personally I would strongly advise you to give the subject your serious and mature consideration and send a strong resolution supporting the idea. Perhaps I may explain this point a little further. The origin of the Agra Medical School dates back to the time when medical assistance was sorely needed chiefly for the military and the Government. It was, at that time, that medical school was started on a small basis and we are satisfied that the students received sufficient training to work as sub-assistant surgeons and to help the medical officers attached, to the Army. Much water has flown down the Ganges since this antiquarian regime and it is high time that the State should realize its responsibility towards supplying proper and qualified medical aid to the masses who suffer owing to the great want of sufficient number of men trained in the system of Allopathy as well as a sufficient number of Hakims and Vaids turned out by recognized and modernized institutions. The other medical institution which is catering for the supply of medical aid is the King George's Medical College where admission has become as difficult as it is in entering the Provincial or even the Indian Civil Service. I was horrified to find that a very deserving student was kept back from being admitted, because having suffered from fever lately he was unable to compete in a race. Ladies and gentlemen, I admit that we should see that a person entering the medical line is possessed of a good and strong physique but I fail to see why he should be kept back if he has failed to compete in a race which qualification I thought was more suited for the military or the policemen.

Medical Administration

The other great question about which I have to make a few observations is the question of medical administration. This, again, dates back to the time of the East India Company when they had to import their doctors along with their armies and after their getting hold of the territory they had to expand a system of medical administration for their service also. The Indian Medical Service (to which I had also the honour to belong during the Great War, although I am proud to say I did the service in an honorary capacity) used to be specially pleaded for owing to the needs of the State during the time of War. The late War has, however, proved it beyond all doubt that with all their claims they were unable to cope with the need of the military and they had not only to fall back on the Civil Medical Service, but also to throw open the doors of the I. M. S. by giving temporary commissions to our graduates, many of whom I am proud to say were fortunate enough to be decorated with Military Crosses and D. S. O.'s, and were mentioned in despatches. The intelligent opinion of the country has already expressed that there are no sane grounds for maintaining this old order of things and continuing the I. M. S. as a military service as well as that used for the civil administration. I do not want to be misunderstood

and I am personally aware of the great and solid work done by the I. M. S. officers who were mostly responsible for imparting education in our colleges so far, but even from this point of view is it not rather ironical to think that after a lapse of more than a hundred years they have failed to produce men who may be looked upon as being equivalent to the medical officers imported from foreign land. Here again, gentlemen, I say with a great deal of pain that it is again a question of vested interests and there is nothing but pure *zid* on the part of the administration to continue the I. M. S. in its present shape and then to make matters worse by reserving big stations for the European members of the Service on the main plea of the European officers' claim to be treated by medical officers of their own nationality. I would only point out the fact of there being several hundreds of Indian medical practitioners who have a large and lucrative practice in London and in other towns of the United Kingdom to-day, a few of them having even entered the rank of specialists in Harley Street whereas there are some amongst us who have been preferred by high European Officers, such as Chief Justice, Commissioner of a Division and Governors of Provinces who have freely availed themselves of the consultation and treatment by pure Indian medical officers, on many occasions in preference to medical officers of their own nationality. It is all very well to talk of a British Commonwealth but when the question comes to rupees, annas and pies it is a question of ' Heads I win, tails you lose.'

Even from a point of efficiency of medical administration I am of opinion that the Civil Medical Service should be made entirely independent of the Military element. I have already said that during the last War the State had to fall back on the civil side of the medical profession. I, therefore, suggest that we can meet with the plea of the State during the time of war by making military service obligatory to all the civil medical officers who may be by turns trained in the military hospitals, and thus be available to the military side during the time of an emergency. I would, therefore, suggest that appointments to the civil side of the medical administration should be thrown open to all qualified medical practitioners for whom there should be one minimum qualification for the whole province and the posts be awarded by competitive examination which will give the best material available. This will mean that there will only be left one class of medical officers, *viz.* the Provincial Medical Service and it may be said that this will rather be impractical to have one class of men for the different charges such as sub-division and divisional headquarters. This difficulty, however, can easily be met with by grading the pay according to the seniority and an efficiency bar. This much for the existing medical service. However, I have another point which I would very much like to put before you and that is this: Why is it that now when we are turning out between 30 to 40 qualified medical graduates every year we cannot run our public hospitals on the same lines on which they are not only run in the United Kingdom, but practically in the rest of the civilized world. In the years gone by when I happened to be a member of the local Legislature I had nearly moved a resolution attacking the present system of medical administration and suggested a system of running our hospitals by honorary medical officers, but before I had done so I was unfortunately misunderstood by my brethren in the Service. It was far from my mind to attack the vested interests and if the system that I am advocating is ever allowed to see the light of day it goes without saying that vested interests will always be protected. At this point, I would like to appeal to my brethren in Service to look at the question from the point of view of the good old saying and precept ' Institutions before men and not men before institutions.' Imagine the vast amount of saving that would be possible by avoiding the large amount of money spent in salaries and last and not the least important of all, imagine the efficiency we would be adding to the work. Let me explain this further. In these days of specialization draw the picture of a man and his plight who sits down with a register and has to cope with three to four hundred patients in an ordinary Government hospital daily. These patients consist of cataracts, refractive errors, polypi in the nose, adenoids, bad throats, typhoid fever, tuberculosis, pneumonia, malaria, accidents and various other kinds of surgical complaints. Compare a hospital where three to four qualified honorary medical officers are attached who perhaps may be given a small honorarium and conveyance allowance and who will divide the work and give individual attention to the patients. I do not think many other arguments are required to establish the point. The system, I am glad to say, has already been acknowledged to some extent by the State but the difficulty comes in the methods, which are and, here I may point out to the draft rules to regulate the honorary physicians and surgeons. The very first para begins with rather unique qualifica-

tions expected of the intending honorary medical officers which are:—

There are two classes of honorary appointments, *viz.*, (*a*) Honorary physicians and surgeons, and (*b*) honorary medical officers.

(A) Honorary physicians and surgeons will be officers of consultant status and (*i*) may be appointed to any sphere of hospital activity; and (*ii*) must possess higher medical qualifications such as F. R. C. S., M. R. C. P., etc., for ordinary appointments. For specialists' appointments either those or some special qualifications in the subjects such as D. O., D. L. O., D. M. R. E., etc.

N.B.—An ordinary English qualifying degree is not regarded as a higher qualification for the purposes of these appointments.

(B) Honorary medical officers—(*i*) may be appointed to attend to outpatients only; and (*ii*) must have held a resident appointment in some hospital prior to their honorary appointments.

(C) After five years' continuous service as an honorary medical officer in the same hospital an honorary officer will become entitled to a vacancy in class A appointments and to be appointed honorary physician or surgeon without the necessity of holding higher academic qualifications.

I fail to understand why on earth if an ordinary M.B.B.S. of the Lucknow Medical College or an L.R.C.P., of London is efficient enough to hold a sole charge of a hospital and carry on all the duties of the medical officer, it should be necessary for an honorary medical officer to be in possession of the above-mentioned extra qualifications.

Having been perhaps the first medical man who offered himself as an honorary medical officer when the scheme was launched during the regime of the then Sir James and now Lord Meston, and having soon realized my position as an honorary medical officer as being of a purely second fiddler who was only allowed to go round with the then civil surgeon and come home at the sacrifice of perhaps a few paying calls I suspect that the scheme is based more on our good old saying. *Na Nao Man Tal ho na Radha Nachen.* I would only ask how many of the regular British I. M. S. officers are of such qualifications as M. D. or F. R. C. S. where as luckily we have many in the provincial service who possess these qualifications but for the fault of their colour are not allowed to rise to the full stature in their profession. It is nothing but denying us our birthright. Ladies and gentlemen, I only say that we must be allowed to rise to the fullest stature inside our profession and not to be kept back simply by injudicious and inequitable prejudices. Let merit be the only guide and let the doors of the I. M. S. be open, and the back door of nomination closed against the continuance of which I have already pleaded and you will see that our men will surpass many competitors who come from foreign countries to get rich on our land.

Coming back to the question of the hospitals being worked by the honorary medical officers, may I very humbly point out that personally I have, thanks to the great help and cooperation which I have received from my colleagues in Allahabad, been able to organize a public hospital on the staff of which there are no less than a dozen qualified medical practitioners, some of whom possess English in addition to Indian qualifications, who have devoted many years to the work and which hospital is doing solid work both in the surgical, medical, hygienic and other special sides such as eye, ear, nose, throat, dentistry, etc., in the heart of the great city of Allahabad, the account of which I dare say you may have seen in the public press and which hospital has had the honour of receiving a visit from the Governor of the province and various heads of the departments, commissioners and collectors, etc. One word more and I have done with this part of the subject. If you ever compare the great paucity of comforts which our hospitals give to our patients, to those offered even in the village hospitals in the west you will have to halt and feel accused almost of a guilty conscience about our not doing our bit towards our suffering brethren. I dare say the amount of saving that would accrue in the shape of salaries of the medical officers could easily go towards adding to the sore needs and wants in the ordinary comforts for our hospital population.

Unemployment

May I now take up the general question of unemployment that is facing us in general and our younger brethren that are facing the question in common with our countrymen in other walks of life? But we as medical practitioners have to take to account a number of facts which in my humble opinion are by no means helping towards bettering

the prospects. I have already mentioned that our medical colleges and schools are turning out not less than 50 to 60 medical practitioners every year, who during the time of their student career in the colleges, specially during the last decade or so, have raised their standard of ordinary comforts unfortunately unnecessarily high and like their colleagues of other department of education, they become more or less alien to their village folks which is a great national loss. With all humbleness I suggest that by doing so they are losing great chances of not only providing themselves with a modest and decent living but keeping back their kinsmen from the advantages of their scientific attainments. It is said that our village folk have to fall back on the more obsolete system of medicines, because they are cheap and because the practitioners of those systems are easily available to them, being members of the same society. Let our young practitioners give up the false notions of prestige and dress simply and go even with a limited armamentorium to the headquarters of a Tehsil and live there and I am sure they will soon establish themselves and earn a living easily than they can do in bigger towns even after a number of years. I appeal to my brethren to face the struggle for existence and not to waste time. I believe it is time when we should recognize our indigenous systems and organize them. Let our brethren carry on their work and depend on the efficiency of their scientific methods which are sure to win in the long run and they will find that they have better chances of becoming popular. I now wish to make a few observations on the encroachment made upon the profession by a number of charitable and other voluntary medical institutions. It has come to my notice that the public who were rich enough or earning enough to pay for a doctor look upon a charitable institution as a matter of right, forgetting that the public subscriptions and Government aid running these institutions were never meant for them at the sacrifice of the indigent population for whom they were really intended. Great respect that I have for such institutions such as Seva Samiti or the mission hospitals, I beg to point out to them, that in these days of unemployment, they should not allow themselves to overstep the rights of other professional workers in their zeal for philanthropy.

Before concluding, I would also point out to the absence of medical element in the local legislature and also in our local boards. In matters of public health our country has not even attained the 18th place in the world. Is it not therefore absolutely necessary that our legislatures should be expected to give some representation to this important section? As President of the Allahabad Medical Association, I know how useful our representative of the local municipal board has been and I suggest to make a representation to the Government to allow different branches of medical associations, representation on the local boards and also on the local Legislative Council. The latter may perhaps be a little late after the announcement of the changed constitution, but I appeal to the intelligent public to try and send at least a few representatives of the medical profession to the Legislature and as an example I may point out the case of my esteemed friend, Dr. Deshmukh of Bombay, who is doing such solid and good work in the Legislative Assembly.

A word about the intended Poison Act and I will conclude. The subject has been discussed threadbare in many district medical associations and I leave it to you to dispose it of by a special resolution. I consider it unfortunate that his Excellency the Governor did not allow our deputation to wait on him, which perhaps means that we have not become vociferous enough and let me, therefore, hope that before another year every district in the United Provinces will have a regular and recognized branch of our provincial association.

Ladies and gentlemen, I am conscious of the fact that I have not even touched on the purely scientific side or the academic side of our profession, but this I am sure will be better left to be dealt with by a special section of this conference and I must thank you once again for the great indulgence you have shown me in listening to my observations which I assure you I have made with the purest motives and real sympathy for the profession which I have loved and adored and which I consider a great honour to belong to.

The Second Day's Proceedings

The second day of the open session of the Second U. P. Medical Conference opened in the hall of the Cawnpore Medical Association building, at 2 p.m., on 13th October last with Major D. R. Ranjit Singh in the chair.

Dr. Bhupal Singh of Meerut moved the following resolution:

Resolved that the considered opinion of this Conference with regard to amendments to the

Poisons' Rules contained in G. O.'s No. 1273/VI-1776-1930 dated Sept. 29, 1933, and No. 1000-VI-1776-1930 dated April 15, 1935, published in the *U. P. Gazette*, dated Sept. 30, 1933 and May 18, 1935, respectively, is that these amendments are derogatory and detrimental to the interests of the medical practitioners possessing registrable qualifications, who are exempt from the provisions of the Poisons' Act, under sec. 9(1) of the Act and, therefore, reiterates its request that the Government be pleased to entirely rescind the said amendments.

Resolved that the elected members of the U. P. Medical Council be requested to make special efforts to get the amendments referred to above rescinded and if necessary to resign on this issue and seek re-election.

Resolved that the considered opinion of this Conference is that no amendments to the original Poison' Rules made under Section 2 of the Poisons' Act XII of 1919 are necessary as far as they affect the qualified medical practitioners.

Resolved that the members of the Legislatures be requested to take up this question on the floor of the house.

Dr. Hulas Rai of Cawnpore seconded it, and Dr. H. N. Shivapuri supported it, after which it was adopted.

Independent Medical Practitioners in Hospitals

Dr. K. P. Bagchi of Agra then moved the following resolution:

Resolved that the considered opinion of this Conference regarding the rules for the association of the independent medical practitioners in the work of the Government on the local Government or the local board hospitals contained in G. O. No. 2207/IX-322 dated Sept. 5, 1935, published in the *U. P. Gazette*, dated Sept. 7, 1935, are most unsatisfactory and derogatory to the dignity of independent practitioners and, therefore, reiterates its request that the Government be pleased to rescind them and frame new rules in consultation with the accredited representatives of the Indian Medical Association, U. P. Provincial Branch.

Resolved further that this Conference recommends that the length of private practice, status in the profession and experience of the work should be the guiding principle in obtaining the appointments of honorary physicians and surgeons and that foreign qualifications of a general type should in no case be given a preference to Indian medical qualifications, unless there are special reasons to act otherwise.

Dr. P. C. Sen of Cawnpore seconded the resolution, which was supported by Dr. B. N. Mehrotra of Etawah. The resolution was carried.

Wanted Amendment of U. P. Medical Act

Dr. Kunj Behari Lal of Meerut then moved the following resolution:

That this Conference reiterates its request to the Government to amend the U. P. Medical Council Act in the light of the resolution No. 5 passed at the 1st U. P. Medical Conference held at Meerut on the 11th and 12th October, 1934.

Resolved further that the Hon. the Minister in-charge of the Local Self-Government and Medical department and the members of the Legislatures be requested to get the U. P. Medical Act amended in the light of the above resolutions.

Dr. Hulas Rai seconded it and Dr. Noronha supported it and it was adopted.

Dr. G. P. Capoor of Agra then moved the following resolution, which was adopted, after being seconded by Dr. C. B. Lal Dina of Benares, and supported by Dr. S. N. Mukerji of Cawnpore:

Resolved that whereas the health and sanitation is one of the most important departments of the municipal and district board administration, this Conference reiterates its request to the Government to amend the rules of the constitution of municipal and district boards, so that the Medical Associations of the cities and districts of the United Provinces might be allowed to select a qualified medical man as its representative in municipal and district boards.

Further resolved that members of the Legislative Council be requested to move the matter in the Council.

U. P. State Medical Faculty

This was followed by the following resolution, moved by Dr. K. P. Bagchi of Agra, which was seconded by Rai Saheb Dr. Ram Narain Lal of Mussoorie and was supported by Dr. Mannu Lal Sharma of Meerut, after which it was carried:

That this Conference registers its protest against the tone of the letter No. 133/V-150 dated March 13, 1935, from the Deputy Secretary to the U. P. Government addressed to the provincial honorary secretary, regarding the election of representatives from independent medical men to the governing body of the U. P. State Medical Faculty, and again reiterates its request to the U. P. Government to transfer to the Indian Medical Association, U. P. Provincial Branch, its legitimate privilege of electing two representatives from the independent medical profession to the governing body of the U. P. State Medical Faculty, which has hitherto been enjoyed by the U. P. Provincial Services Medical Association.

Resolved further that a copy of this resolution be forwarded to the Hon. Minister for Local Self Government, U. P.

Dr. Jawahar Lal Rohatgi of Cawnpore then moved the following resolution,

Resolved that in clause 8 of sec. 3 of the Lunacy Act IV of 1912, giving the definition of a ' medical practitioner ' as a holder of a qualification to practise medicine and surgery which can be registered in the United Kingdom, the words ' in the United Kingdom ' be deleted and the same be replaced by the words ' with a Medical Council of any of the provinces in India,' and in clause 1 of sec. 5 of the same Act, saying that an application for a reception order shall be made by petition accompanied by a statement of particulars to the magistrate shall be in the form prescribed and shall be supported by two medical certificates on separate sheets of paper, one of which shall be from a medical officer ' be deleted and replaced by the words from two registered medical practitioners.'

It was further resolved to forward copies of this resolution to the important members of the Legislative Assembly.

Dr. Kunj Behari Lal Verma of Meerut seconded it and Dr. Mohan Lal Mehra of Jhansi supported it, after which it was adopted.

Dr. Bhupal Singh of Meerut then moved the following resolution:

That this Conference notes with regret and great disappointment that his Excellency the Governor of the United Provinces did not see his way to receive the deputation of medical men appointed at the 1st U. P. Medical Conference, to represent to him the grievances of the medical profession in the United Provinces.

Dr. H. N. Shivapuri seconded the resolution and Dr. B. N. Agarwal of Agra supported it, after which it was carried.

The next resolution, moved by Dr. Hira Lal of Meerut ran:

Resolved that this Conference invites the attention of the U. P. Government to the following resolution of the XI All-India Medical Conference held at Delhi, in December last year, and requests the U. P. Government to give effect to the same so far as it affects these provinces. This Conference is of opinion that the demand by the various Governments or bodies under state control for countersignature on certificates issued by the registered medical practitioners is uncalled for and inequitable, and urges its abolition immediately.

Dr. Noronha of Cawnpore seconded it, and Dr. Jawahar Lal Rohatgi of Cawnpore supported it, after which it was adopted.

Dr. S. N. Mukerji of Cawnpore then moved the following resolution:

Resolved that this Conference considers the code of medical ethics as published in the list of Registered Medical Practitioners of U. P. defective in many ways and demands that the same be amended in consultation with the Indian Medical Association, U. P. Provincial Branch.

After being seconded by Dr. Hira Lal of Meerut and supported by Dr. B. N. Mehrotra of Etawah, it was also passed.

Dr. S. N. Sen of Cawnpore moved the following resolution:

Resolved that in the opinion of this Conference, it is high time that a minimum standard of qualification of eligibility for reception by the Indian Medical Council be laid down, and in order to enable the products of the Agra Medical School to be recognized, the standard of education in the Agra Medical School be suitably, raised accordingly.

Resolved that a copy of this resolution be sent to the Central Council of the Indian Medical Association, to include it in the resolutions of the coming All-India Medical Conference.

After being seconded by Dr. S. Haldar of Muzaffarnagar and supported by Dr. S. B. Vyas, of Meerut, this also was carried.

A condolence resolution over the recent sad demise of the philanthropic lady doctor of Cawnpore,

Dr. Mrs. Gamgabai Kamble, moved from the chair, was adopted at the start of the proceedings, and was moved at the start of the proceedings, and respect for the great deceased.

Two sittings of the science section were held in connection with the Conference, under the presidentship of Dr. Bhupal Singh, when several interesting subjects were discussed.

The session came to a close after an 'at home' arranged by the reception committee to the Conference, when most of the outstation delegates and leading medical men of Cawnpore were present. A photo group was also taken on the occsaion.

U. P. BRANCH

The annual general meeting of the U. P. Branch of the Indian Medical Association was held on October 13, at 8 a.m., when Dr. Bhupal Singh read the annual report of the association and its audited accounts for the year 1934-35, which were unanimously adopted.

The following office-bearers were elected for the coming year:—

President: Major D. R. Ranjit Singh; *Vice-Presidents:* Dr. H. N. Hukku (Lucknow), Dr. S. S. Haldar (Muzaffarnagar), and Dr. Murari Lal (Agra); *Secretary:* Dr. Bhupal Singh (Meerut); *Joint Secretaries:* Dr. K. P. Bagchi (Agra); Dr. S. N. Misra (Cawnpore) and Dr. R. N. Bose (Meerut); *Treasurer:* Dr. S. K. Choudhri (Benares); and *additional Members* of the Council: Dr. H. N. Beri (Bulandshahr), Dr. R. C. Mittra (Meerut), Dr. S. B. Vyas (Meerut), Dr. J. L. Caroli (Meerut) and Dr. Kunj Behari Lal Verma (Meerut).

An appeal was then made for a special fund, and subscriptions amounting to about Rs. 500 were promised on the spot.

BENGAL PROVINCIAL BRANCH

The Bengal Provincial Branch was formed at a special general meeting of the members of the Indian Medical Association residing in Bengal.

It was resolved that the Executive Committee of the Calcutta Branch should function provisionally as the Provincial Council till the election of the Bengal Provincial Branch.

The following lady and gentlemen were elected to constitute the Bengal Provincial Council, Indian Medical Association, for 1935—36.

President—Lt.-Col. K. K. Chatterjee, F.R.C.S.I., I.T.F., V.H.S.

Vice-Presidents—Dr. J. N. Bose, L.M.S., Major T. A. Thomas, M.D., M.R.C.P. (Lond.), I.M.S., Civil Surgeon (Darjeeling), Dr. G. P. Mitra, M.B. (Dacca).

Secretaries—Dr. A. K. Sen, M.B., Dr. B. K. Ghosh, M.B., D.P.H. (Barrackpore).

Asst. Secretaries—Dr. B. N. Ghosh, M.B. (Cal.), F.R.F.P.S. (Glas.), Dr. Nani Lal Ghosh, M.B.

Treasurer—Dr. A. K. Chakraborty, M.B.

Members of the Provincial Council—Sir Nilratan Sircar, Kt. M.A., M.D., D.C.L. (Oxon.), L.L.D. (Edin.), &c., Dr. B. C. Roy, B.A., M.D., M.R.C.P. (Lond.), F.R.C.S. (Eng.), Dr. K. S. Ray, M.A., B.Sc., M.B., ch.B. (Edin.), Dr. D. P. Ghosh, B.A., M.B., Dr. P. C. Rakshit, M. sc., M.B., Dr. S. C. Sen Gupta, M.D., F.R.C.S. (Edin.), Dr. C. C. Bose, B.A., M.B., Dr. N. R. Sen Gupta, M.D., Dr. Profulla Chakraborty, B.Sc., M.B., Dr. K. C. Chakraborty, L.M.F., Dr. Tarak N. Ghosh, M.B., Dr. J. C. Banerjea, M.B., M.R.C.P. (Lond.), M.R.C.S. (Eng.), Dr. J. N. Dutt, B.Sc., M.B., Dr. Miss Maitraye Bose, M.B. (Cal.), M.D. (Munich), Dr. R. C. Roy, L.M.S., D.P.H. (Lond.), Dr. R. C. Sen, M.B., Dr. A. K. Bose, M.Sc., M.B. (Cal.), M.R.C.S. (Eng.), L.R.C.P. (Lond.), Dr. A. D. Mukherji, L.M.F., Dr. S. Nandy, D.P.H. (Barrackpore), Dr. N. Aich, M.B., (Barrackpore), Dr. M. L. Mondal, L.M.P. (Barrackpore), Dr. S. R. Ghosh, B.Sc., M.B. (Faridpur), Dr. S. M. Sinha, L.M.F. (Faridpur), Dr. A. C. Bose, M.B. (Darjeeling), Dr. B. A. Irvine, I.M.D. (Darjeeling), and Dr. S. P. Sen Gupta, L.M.F. (Comilla).

MEDICAL ASSOCIATIONS, SOCIETIES ETC.

Medical Societies, Associations, Unions, etc., are invited to make use of this section of the Journal—EDITOR.

BOMBAY MEDICAL COUNCIL

The following are extracts from the summary of the proceedings of the meeting of the Bombay Medical Council held on 3rd September, 1935.

The Council proceeded to consider the application of the Rangoon University for the acceptance of the L. M. & S. of that University for registration under the Bombay Medical Act, 1912, and decided that Government be asked to add the L. M. & S. of the Rangoon University to paragraph 1 of the Schedule to the Bombay Medical Act.

The Council proceeded to consider the application from the Director, Medical and Sanitation Department, H. E. H. the Nizam's Dominions, for the acceptance of the M.B., B.S. degree and the L. M. & S. diploma of the Osmania University, Hyderabad, Deccan, for registration under the Bombay Medical Act, 1912, and resolved that the matter be referred back to the Executive Committee of the Council for further consideration in the light of the information since received from the Director, viz., that the medium of instruction at the Osmania Medical College, according to the regulations of the Osmania University, is Urdu.

The Council proceeded to consider certain papers received from Government relating to the question of recognition, for registration under the Bombay Medical Act, of the medical graduates of American "A" Class Universities on certain conditions, which had previously been under discussion, and it was decided that, in view of the recent establishment of the Medical Council of India and the functions entrusted to it, it should be suggested to Government that the question be referred to that Council.

The Council considered the reports on the First L. C. P. S. Examination received from the Visitors appointed by the Council to attend and be present at the Professional Examinations for the L. C. P. S. and it was decided that the reports be referred to the College of Physicians and Surgeons of Bombay for the necessary further action.

The Council proceeded to consider an appeal from Mr. U. H. Sadarangani, M.B., B.S., of Karachi, regarding a resolution of the Executive Committee of the Council, laying down that the size of his sign-boards be reduced to the minimum and that, at the least, a 4 feet board be substituted for the existing 8 feet board, and it was decided to accept the resolution of the Committee.

The Council proceeded to consider the papers received from Government relating to the application of Mr. K. P. Deshpande for permission to be registered under section 7(3) of the Bombay Medical Act, 1912, and decided that, in the opinion of the Council, Mr. Deshpande may be given the permission applied for.

The Council proceeded to consider the question of the instructions to be issued to the Visitors appointed by the Council to attend and be present at Professional Examinations and it was decided that, as the last visits of the Visitors to the Professional Examinations for the L. C. P. S., Bombay, had only recently been completed, a further inspection of them this year is not necessary.

The Council resumed consideration of the application made by Mr. S. P. Lulla, M.B.B.S., for the restoration of his name to the Bombay Medical Register and resolved that his name be restored to the Register as a special case.

The Council proceeded to consider again the application of Mr. Motiram Tirithdas Ramchandani, M.B.B.S., for the restoration of his name to the Bombay Medical Register and resolved that some more time should elapse before Mr. Ranchandani's application is entertained.

The Council proceeded to consider the application of Mr. Narayan Krishna Panse, L.C.P.S., for the restoration of his name to the Bombay Medical Register and resolved that, in view of the short time that has elapsed since the removal of his name from the Register, his application for the restoration of his name to the Register should not be entertained yet.

The Council proceeded to consider the application of Mr. Ganpat Subrao Kasyapi, L.M. & S., for the restoration of his name to the Bombay Medical Register and resolved that, in view of the short time that has elapsed since the removal of his name from the Register, his application for the restoration of his name to the Register should not be entertained yet.

The Council considered a motion made by Mr. M. N. Talati, L.C.P.S., (1) that, in the absence of the benefits of a Provident Fund, the staff of the Bombay Medical Council be given a reasonable amount of bonus for the financial year 1934-35, and (2) that steps should be taken at a very early date to establish a Provident Fund for the benefit of the staff of the Council with effect from 1st April, 1935, and it was resolved that only the proposal to institute a Provident Fund for the staff be accepted and that the necessary further steps to work out the details be taken.

The Council proceeded to consider a motion made by Mr. R. A. Amesur for the creation of a separate cadre of teachers for the three Government Medical Schools in the Presidency and for the proper equipment of the laboratories and museums provided for them and eventually it was decided to invite the attention of Government to the reports of the visitors appointed last year to visit the examinations for the L. C. P. S. and to the necessity for the introduction of a special teaching cadre and better equipped laboratories and museums for certain Departments of the Medical Schools.

ALL-INDIA OPHTHALMOLOGICAL SOCIETY

Drs. G. Zacharia and B. N. Bhaduri, Hony. Secretaries, All India Ophthalmological Society, report that as a result of the deliberations of the above Society at its fourth Conference in Madras on the 22nd, 23rd and 24th April, 1935, at which the urgent need for more co-ordinated and energetic measures in connection with the prevention of blindness in India was emphasised, the Committee placed the following to the authorities concerned both in British India and the Indian States.

1. Before registration, certification or licensing of qualified medical practitioners, midwives, or others concerned with the conduction of childbirth, a guarantee be given by competent medical authority that aspirants for such registration, certification, or license possess a practical knowledge of the prophylaxis of ophthalmia neonatorum, preferably Creds' method or a modification thereof.

2. That in view of the very serious menace to sight constituted by that condition sometimes called xerosis of the conjunctiva or keratomalacia, but actually the expression of a multiple deficiency complex (a food problem), the authorities concerned, namely, the Government of India, the Indian Research Council and the local Governments in British India and the various Governments of the Indian States, do require of the special medical officers employed on nutritional research, a report on the human condition as seen in the hospitals, and practical suggestions as to how the food defects concerned may be met by alternative food crops or similar measures adopted in co-operation with the Agricultural Department or other departments concerned with this problem.

3. That the statements quoted from official sources by the International Association for the prevention of blindness in their report for 1934 on the frequency of trachoma in certain regiments of the the Indian Army is viewed with concern.

Over 70% of the Sikhs in certain North West Frontier regiments are said to be affected. The percentage of infected Punjabis, Pathans and Dogras in these units is also very high. It is respectfully requested that the authorities under the Government of India responsible for these figures explain how they were arrived at and what criteria, if any, were employed in making the diagnosis of trachoma. Should the figures be correct then these regiments constitute a grave danger not only to the Indian army in time of war, but more important to this Society, a grave danger to the civil population of those districts to which such regiments may be transferred, in time of peace. It is suggested that the authority concerned, in this case the Government of India, takes the necessary steps to institute an enquiry under competent specialist control to check the figures quoted, and to lay down rules of guidance regarding the diagnosis of trachoma.

4. The legislation regarding the inspection of the eyes of school children be introduced at a very early date by all the authorities concerned throughout British India and the Indian States.

5. That the authorities concerned tighten up the administration of the machinery dealing with the prevention of small-pox.

6. That the authorities concerned institute propaganda methods for the instruction of the uneducated with regard to the prevention of blindness, especially the rural population.

Such methods, in the beginning, might consist of:—

(*i*) Broadcasting by radio in the vernacular where the necessary machinery is established.

(*ii*) Distribution of pamphlets and posters through the medical and educational departments.

(*iii*) The employment of a travelling motor unit organised for propaganda work fitted with cinema, posters and pamphlets, and a dispensary for urgent ophthalmic aid. This motor unit to be manned by a cine-operator and lecturer, and a qualified ophthalmologist, so that first aid may be given on the spot at the places of demonstration.

The films and posters used must be simple, topical and sufficiently colourful to arrest the eye, and as far as possible self-explanatory. Films should be on the lines of the health films used by the Rockefeller Foundation in India. Captions, if any, must be in the vernacular. The lecturer must understand and speak the vernacular, and be able to give a running commentary.

7. That, as syphilis both congential and acquired, is such a potent cause of blindness, the authorities concerned—the Local Governments in British India and the various Governments of the Indian States—institute and foster, or extend, if already in existence, the branch of their medical departments devoted to the treatment of the venereal diseases. Such special departments should be modelled, so far as possible, on the lines of similar departments already in existence in Great Britain.

THE ACADEMY OF SCIENCES, U. P.

An extraordinary monthly meeting of the Academy of Sciences of the United Provinces of Agra and Oudh was held on Friday, May 10, 1935. In the absence of the President, Prof. A. C. Banerji, Vice-President, was voted to the chair.

The following papers were read and discussed:

1. R. N. Ghosh and L. P. Verma, Physics Deptt., Allahabad University: On the application of Heaviside's method to the problem of vibrations of Pianoforte string.
2. Har Dayal Srivastava, Zoology Department, Allahabad University: New Amphistomatous Parasites from an Indian Fresh-water Fish.
3. Hrishikesh Trivedi, Physics Department, Allahabad University: The absorption spectra of the vapour of oxides of copper, iron, nickel and cobalt and the determination of their heats of sublimation.

The ordinary monthly meeting of the Academy of Sciences of the United Provinces of Agra and Oudh was held in the Physics Lecture Theatre, Muir College Buildings, Allahabad, on the 27th of July, 1935, at 4 p.m.

The following papers were read and discussed, Prof. N. R. Dhar, President of the Academy, being in the chair:

1. Radha Raman Agarwal and Shikhibhushan Dutt, Chemistry Department, Allahabad University: The Chemical Examination of the fruits of Lagenaria Vulgaris Seringe (bitter variety), Part I. The constituents of the oil from the seeds.
2. Mohit Kumar Mukherjee and Shikhibhushan Dutt, Chemistry Department, Allahabad University: Colour and constitution of Dyestuffs derived from Fluorenone.
3. H. R. Mehra, Zoology Department, Allahabad University: New Trematodes of the family Lecithodendriidae Odhner, 1911, with a discussion on the classification of the family.
4. S. C. Verma, Zoology Department, Allahabad University: Preliminary account of new trematodes with Ani.
5. Jagraj Behari Lal, Chemistry Department, Allahabad University: A note on the colouring matter of the flowers of Lantana Camera, Linn.

(*Science and Culture*, September, 1935.)

BIOCHEMICAL SOCIETY, CALCUTTA

In the Annual General Meeting of the Biochemical Society, Calcutta, held at the All-India Institute of Hygiene on July 11, the annual report of the Secretary and Treasurer was presented by the Secretary Dr. B. C. Guha. In course of the report, the Secretary said "The Biochemical Society, Calcutta, was inaugurated in a meeting held at the All-India Institute of Hygiene on July 5, 1934. The need of such a society for the promotion of biochemical studies and research had been felt for sometime and it was hoped that the creation of such a scientific body in Calcutta would evoke local response. In this expectation the promoters of the Society have been fully justified. The record of last year's work shows good progress and stimulates hope for the future."

Since the inauguration of the Society in July, 1934, ten meetings have been held in which the following fourteen papers have been read and discussed. The papers display a wide range of interests.

1. B. Ahmad—The Metabolism of Carotene.
2. A. C. Roy—Cultivation of Micro-Organisms on Vegetable Media.
3. S. C. Banerjee and H. K. Sen—Catalytic Activation of Disease.
4. R. C. Bhattacharjee—The Therapeutic Applications of Snake Venom.
5. A. R. Ghosh and B. C. Guha—Vitamin C in Indian Food-stuffs.
6. B. Ahmad—The Excretion of Vitamin C in Human Urine.
7. P. C. Mitter and N. N. Chatterjee—The Formation of Purines from Iminazoles.
8. B. N. Ghosh—The Combination of Antigens with Anti-bodies.
9. N. R. Chatterjee, D. N. Chatterjee, Pasricha and S. Ghosh—Effect of Bateriophage on the Enzyme Activity of Vibrio Cholerae.
10. A. C. Roy—Biochemistry of Snake Venom.
11. J. S. Chowhan—Therapeutic uses of Snake Venom.
12. B. C. Guha and H. G. Biswas—Flavines and Vitamin B_2.
13. B. C. Guha and A. R. Ghosh—The Biological Synthesis of Ascorbic Acid.
14. H. E. C. Wilson and S. L. Mukherjee—Some Observations on the Composition of the Urine in Relation to Calculus Formation.

At the annual meeting the following papers were read:—

1. N. Das and B. C. Guha—The Respiration of Bact. Staphylococcus.
2. A. R. Ghosh and B. C. Guha—The Relation between Dietary Composition and the Urinary Excretion of Ascorbic Acid.

For the next year the following have been elected to form the Committee:—

Mr. N. M. Basu, Dr. P. K. Bose, Dr. P. De, Dr. J. N. Mukherjee, Dr. S. N. Ray, Mr. A. C. Roy, Dr. B. B. Sen and Dr. H. E. C. Wilson. Dr. S. Ghosh and Dr. B. C. Guha have been elected Hony. Secretaries and Dr. B. Ahmad Hony. Treasurer.

ALL-INDIA MEDICAL LICENTIATES' ASSOCIATION, ASSAM BRANCH

The Sixth Annual Provincial Conference of the Assam Branch of the All-India Medical Licentiates' Association was held on Saturday, the 26th October, 1935, in the Anatomy Theatre of the Local Berry White Medical School at 2 p.m.

In opening the Conference, Mr. C. S. Gunning, M.A., I.C.S., Deputy Commissioner, Dibrugarh, in a short speech said that he is no medical man and as such he is not supposed to know much about the grievances of the Licentiates so far as their exclusion from the Indian Medical Council is concerned. Moreover as the matter is controversial he does not like to say anything about it. As regards their unemployment problem, he said that as their is very little room in the Local Bodies and Government institutions, they should try to open small dispensaries in the moffusil villages.

Mr. N. C. Bordoloi, M.L.A., was then proposed to the Chair.

Dr. M. N. Borooah, Chairman of the Reception Committee, in course of his address narrated at length the troubles and vexations that the licentiates undergo in every walk of their services and lives and the absence of sympathies on the parts of those whose subordinates they are. He appealed to the Government to raise their status and increase their grades as well. He protested against the appointment of the M. B.'s in the local bodies and thereby increasing the number of the unemployed in their group and asked the tea planters to treat them kindly.

He also laid stress on the exclusion of the licentiates from the Medical Council. He described it as "water-tight compartmentalism" and demanded "fair field and no favour" from the Council concerned.

He also demanded that the course of the medical schools should be extended to 5 years instead of 4 years and that passed students should be sent to the Tropical School of Medicine instead of Campbell School and also demanded foreign training as it is being done in Madras.

The Secretary of the Reception Committee then read telegrams and letters intimating inability to attend the Conference and expression of sympathy from H. E. the Governor of Assam, D. P. H., Assam, Mr. Mehta, I.C.S., Mr. Higgins, I.C.S., Commissioner, A. V. D., Civil Surgeons of Nowgong, Khasia Hills, Naga Hills, Silchar, Kumar Bhupendra Narayan Dev, M.L.C., and several other officials and non-officials and Licentiates also.

PRESIDENT'S ADDRESS

The President then read his address. He said the Licentiates have not only been excluded from the All-India Register thus confining them to the Provincial Register and Provincial Status alone, but they have been strictly put down to the subordinate positions with which they began their career. An Assistant Surgeon may some day aspire to be a Civil Surgeon but a Sub-Assistant Surgeon have no chance of being an Assistant Surgeon within measurable time. Col. Sir Henry Gidney, M.L.A., has been crying hoarse over this affair. He deprecates compartmentalism and deplores the policy pursued in India that once a man is a subordinate he is always a subordinate. He added, since the last 25 years the All-India Medical Licentiates' Association so found has been struggling to raise the course of study from 4 to 5 years and thereby improve the course of training. They insist that the minimum registrable standard should be prescribed and the curriculum of studies in medical schools should be standardised and systematised all throughout India.

In conclusion, he struck a note of optimism and said the old order is changing giving place to the new. The orthodoxy and conservatism of the British Government notwithstanding, affairs must march on progressively. The unsatisfactory arrangements everywhere must give place to orderly progress. Time is not far off when your own people will actually take the place of affairs in spite of the present impediments doggedly and senselessly imposed. Do not relax your efforts and do not cease to try to improve your qualifications and attainments. God will crown you with success, in spite of men's short-sighted actions.

MEDICAL NOTES & NEWS

NATIONAL INSTITUTE OF SCIENCES

The following papers were read in a meeting of the National Institute of Sciences of India held on Saturday the 24th August last.

(1) The Role of Electrical Charge in the Phagocytosis of Red Cells in Malaria, by Lt.-Col. R. N. Chopra, C.I.E., I.M.S., Mr. S. N. Mukherjee and Dr. K. V. Krishnan;

(2) " Nappe Structure in the Archaean Rocks of the Central Provinces, by Mr. W. D. West, Geological Survey of India;

(3) Loss of Morphine in Indian Opium on Storage, by Dr. H. B. Dunnicliff, Dr. J. N. Ray and Mr. Gurcharan Singh.

A symposium on problems of the Ionosphere was also held under the auspices of the National Institute of Sciences.

THE INDIAN SCIENCE CONGRESS

Arrangements are now actively in hand for the forthcoming meeting of the Indian Science Congress Association to be held early in January in Indore.

The meeting is being held under the patronage of H. H. the Maharajadhiraj Raj Rajeswar Sawai Shree Yeshwant Rao Holkar Bahadur, Maharaja of Indore. In accordance with the alteration, which was made last year in regard to the President's term of office, Dr. J. H. Hutton will remain President of the Association until he hands over his office at the inaugural meeting to the President-Elect, who is Rai Sir Upendranath Brahmachari, Bahadur, Kt., M.A., M.D., Ph.D., F.S.M.F., F.A.S.B.

At the last meeting of the Congress, held in Calcutta, two alterations were made in the list of sections. The name of the Geology Section was changed to " Geology and Geography," thus indicating that papers on geography would be accepted; while a new section for Physiology was added, thus bringing the number of sections up to 10.

The names and addresses of the Sectional Presidents are as follows:—

1. *Mathematics and Physics.*—Dr. T. Royds, D.Sc., Director, Kodaikanal Observatory, Kodaikanal, S. India.

2. *Chemistry.*—Dr. P. C. Guha, D.Sc., Professor of Organic Chemistry, Indian Institute of Science, Bangalore.

3. *Geology and Geography.*—B. Rama Rao, Esq., M.A., Mysore Geological Department, Bangalore.

4. *Botany.*—Dr. S. R. Bose, D.Sc., F.R.S.E., F.L.S., Professor of Botany, Carmichael Medical College, Belgachia, Calcutta.

5. *Zoology.*—Dr. H. K. Mukherjee, D.Sc., D.I.C., University Professor and Head of the Department of Zoology, Calcutta University, 35, Ballygunge Circular Road, Calcutta.
6. *Anthropology.*—H. C. Chakladar, Esq., M.A., Lecturer in Anthropology, Calcutta University, 28/4, Srimohan Lane, Kalighat, Calcutta.
7. *Agriculture.*—Mr. A. K. Yagna Narayan Aier, M.A., Dip. In Agri. (Cantab.), N.N.D., F.C.S. (Retired), Director of Agriculture, Sankarapuram, Bangalore.
8. *Medical and Veterinary Research.*—Lt.-Col. H. E. Shortt, I.M.S., Director, King Institute, Guindy, Madras.
9. *Physiology.*—Dr. W. Burridge, D.M., M.A. (Oxon.), Professor of Physiology, Lucknow University.
10. *Psychology.*—J. M. Sen, Esq., M.Ed. (Leeds), B.Sc. (Cal.), F.R.G.S., Inspector of Schools, Presidency Division, Bengal, 63, Lansdowne Road, Calcutta.

One of the primary purposes of the Association is to encourage scientific work in different parts of India. This year it is meeting in Indore for the first time, and it is hoped that a large number of members will attend and help to stimulate scientific research in that part of India.

Indore, in addition to being fairly centrally situated for scientists from Western and North-Western India, offers many attractions both in the city itself and in its immediate neighbourhood. Owing its origin to the great movement for Maratha imperialist expansion of the 18th century, Indore at present enjoys the premier position among the states included in the Central India Agency.

The Local Secretaries will be Dr. S. S. Deshpande, Vice-Principal and Professor of Chemistry, Holkar College, Indore, and Mr. K. A. Patwardhan, Daly College, Indore. It is particularly requested that very early intimation of the accommodation required should be sent to the Local Secretaries.

ITALIAN SCHOLARSHIPS NOT AWARDED TO INDIANS

The Italian Fascist National Federation against Tuberculosis placed six scholarships at the disposal of the International Union against Tuberculosis, Paris, at the " Carle Fortanini " Institute in Rome for the session November 15th, 1935 to July 1936. These scholarships are intended for foreign medical practitioners who are already familiar with tuberculosis problems and who wish to improve their knowledge of this branch of medicine. The Union Secretariat asked all the 43 Governments and organisations which are its members to recommend suitable candidates from their respective countries.

The King George Thanksgiving (Anti-Tuberculosis) Fund which is a member of the Union recommended Dr. S. N. Mazumdar (Calcutta) and Dr. Nanda Lal Mukherjee (Patna) from India for the award of these scholarships. An intimation has been received from the Union Secretariat that guided by a sense of international equity precedence has been given to the candidates of those countries which have not so far benefited by these scholarships. In view of the fact that India has already been awarded two scholarships during the past two years, these scholarships this year have been awarded to candidates of Canada, Denmark, Spain, Latvia, Portugal and Czechoslovakia.

DR. COCHRANE TO TAKE CHARGE OF LADY WILLINGDON LEPER SETTLEMENT AT CHINGLEPUT

Dr. Robert Cochrane has resigned the appointments of medical secretary of the British Empire Leprosy Relief Association and general secretary-treasurer of the International Leprosy Association. He is leaving London with his wife and three children to take charge of the largest leper colony in India—the Lady Willingdon Leper Settlement at Chingleput.

As medical secretary of "Belra" since 1929 he has made extensive tours in various parts of the Empire, and many of his suggestions for organizing work to reduce and eventually stamp out leprosy in the countries visited are being applied by health departments and leprosy workers. His new post will give him better opportunities of making a further mark in leprosy work than is possible without renewed and extensive clinical experience of the disease.

He is succeeded in London by Dr. E. Muir, who has been whole-time leprosy research worker at the Calcutta School of Tropical Medicine since its foundation in 1920, and has done valuable work in confirming and amplifying the discoveries of Sir Leonard Rogers, Honorary Medical Adviser to the Association.

We are informed through Dr. A. P. Pillay, O.B.E., M.B.B.S., Editor-in-chief, Marraige Hygiene, Bombay, of the formation of a Society for the promotion of Family Hygiene including sex hygiene. The aim of the society is, broadly, to help in increasing happiness in the marital and family relationships and ensuring

a general improvement of the human race, the family being the central agent. The Society aspires to have scientific aspects in the form of facilities for research as well as a practical one as an advisory centre on all problems coming within its scope.

So far the following persons have agreed to serve on the All-India Council: Sir V. Ramesam, Madras; Col. Berkeley-Hill, Ranchi; Dr. Ruth Young, Delhi; Dr. Radhakamal Mukherjee, Lucknow; Prof. Gyanchand, Patna; Lt.-Col. Chatterjee, Calcutta and Dr. Khanolkar Bombay.

SOUTH AFRICAN HEALTH CONFERENCE

The South African Health Conference will be held at Durban on November 24, and subsequent days. Major General C. E. Sprawson will represent India at the Conference.

SOCIETY FOR PROMOTION OF FAMILY HYGIENE

We are informed through Dr. A. P. Pillay, O.B.E., M.B.B.S., Editor-in-chief, Marriage Hygiene, Bombay, of the formation of a Society for the promotion of Family Hygiene including sex hygiene. The aim of the society is, broadly, to help in increasing happiness in the marital and family relationships and ensuring a general improvement of the human race, the family being the central agent. The Society aspires to have scientific aspects in the form of facilities for research as well as a practical one as an advisory centre on all problems coming within its scope.

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REVIEW

The Calcutta Dental Review, edited by Dr. R. N. Ghosh, D.O.D.P. (Paris) and published from 183, Dharamtala Street, Calcutta.

This Journal devoted to dentistry and allied subjects has been a recent addition to the list of those published in India. In consideration of the importance of the role of dentistry and oral hygiene in modern medicine it is certain that the profession will welcome such an addition.

Signs of good journalism are evident in some of the articles published so far and the sponsors of the magazine deserve a special note of praise for having undertaken to present to the practitioners recent ideas and advancements in this particular line of medical science.

We wish this new comer in the field years of steady progress.

ACKNOWLEDGMENTS

List of Journals (Foreign) added to the List of Exchange.

1. Rivista Di Malariologia (In English Language).
2. Industrial Medicine (In English Language).

Books Received for Review :

1. Modern Treatment in General Practice.—Vol. II. By Cecil P. G. Wakeley, D.Sc., F.R.C.S., F.R.S.E. Published by Butterworth & Co. (India) Ltd. Avenue House, Chowringhee Square, Calcutta.

NOTICE

A limited number of copies of the Index to Vol. IV of the Journal of the I. M. A. has been printed. Those desirous to have a copy will please apply to

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Journal of the Indian Medical Association,
67, DHARAMTALA STREET, CALCUTTA.